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17	ATI-M92 XTX Power/GND (3/5)	3A	03/15
18	ATI-M92 XTX DisPlay POWER (4/5)	3A	03/15
19	ATI-M92 XTX MEM I/F (5/5)	3A	03/15
20	ATI-M92 XTX VRAM-B DDR3	3A	
21	CRT/LVDS	3A	03/15
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32	1.5VSUS/VTT_MEM	3A	03/15
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35	VGA_CORE(OZ8116)-16A	3A	03/15
36	VCC1.8/0.9/2.5/1.0	3A	03/15
37	POWER(BAT IN / ADA IN/ UL)	3A	03/15
38	CHARGER (ISL6252A)	3A	03/15
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40	Decoulping(Cap)	3A	03/15
41	Power Sequence	3A	
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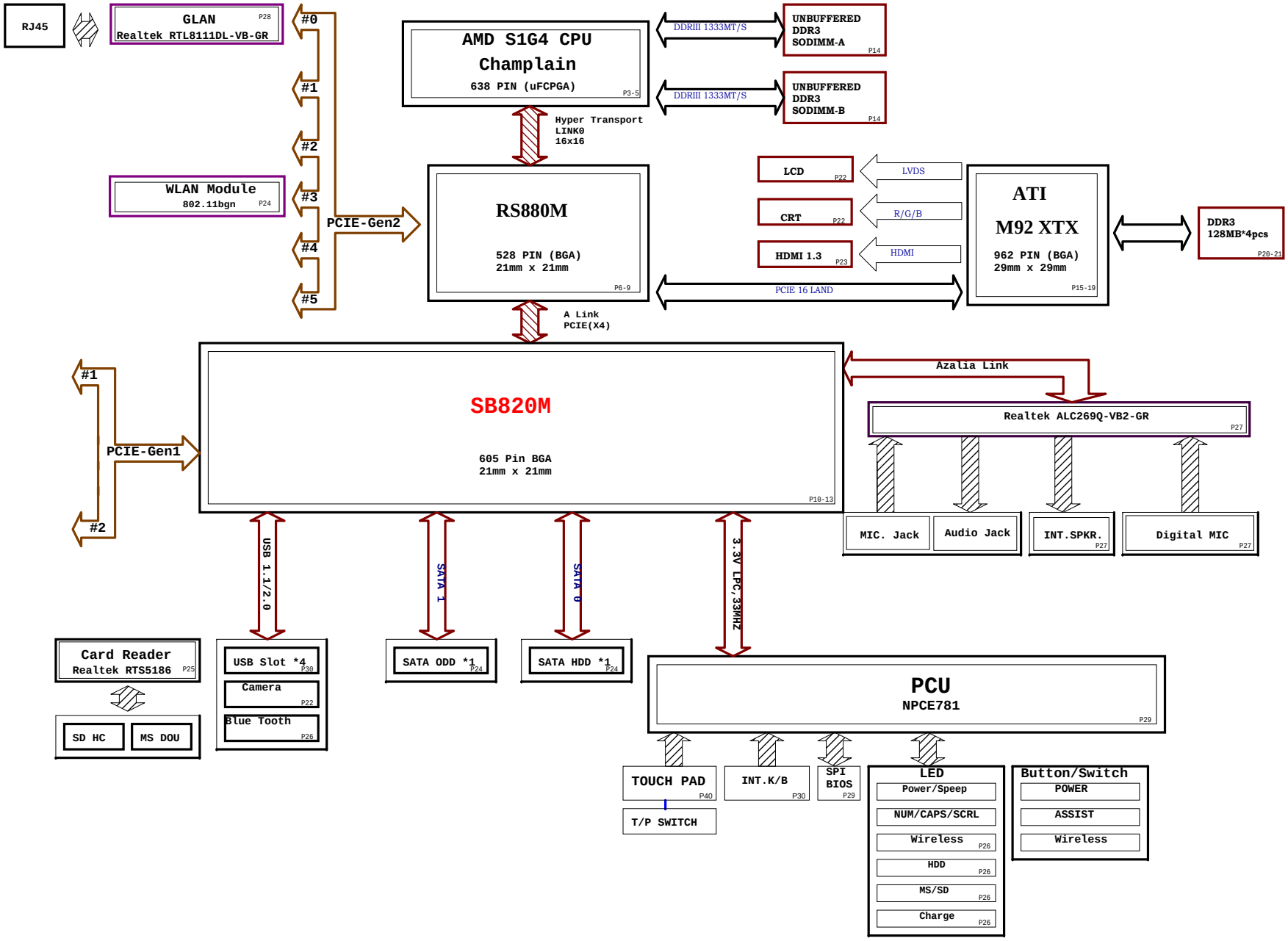
Danube Block Diagram



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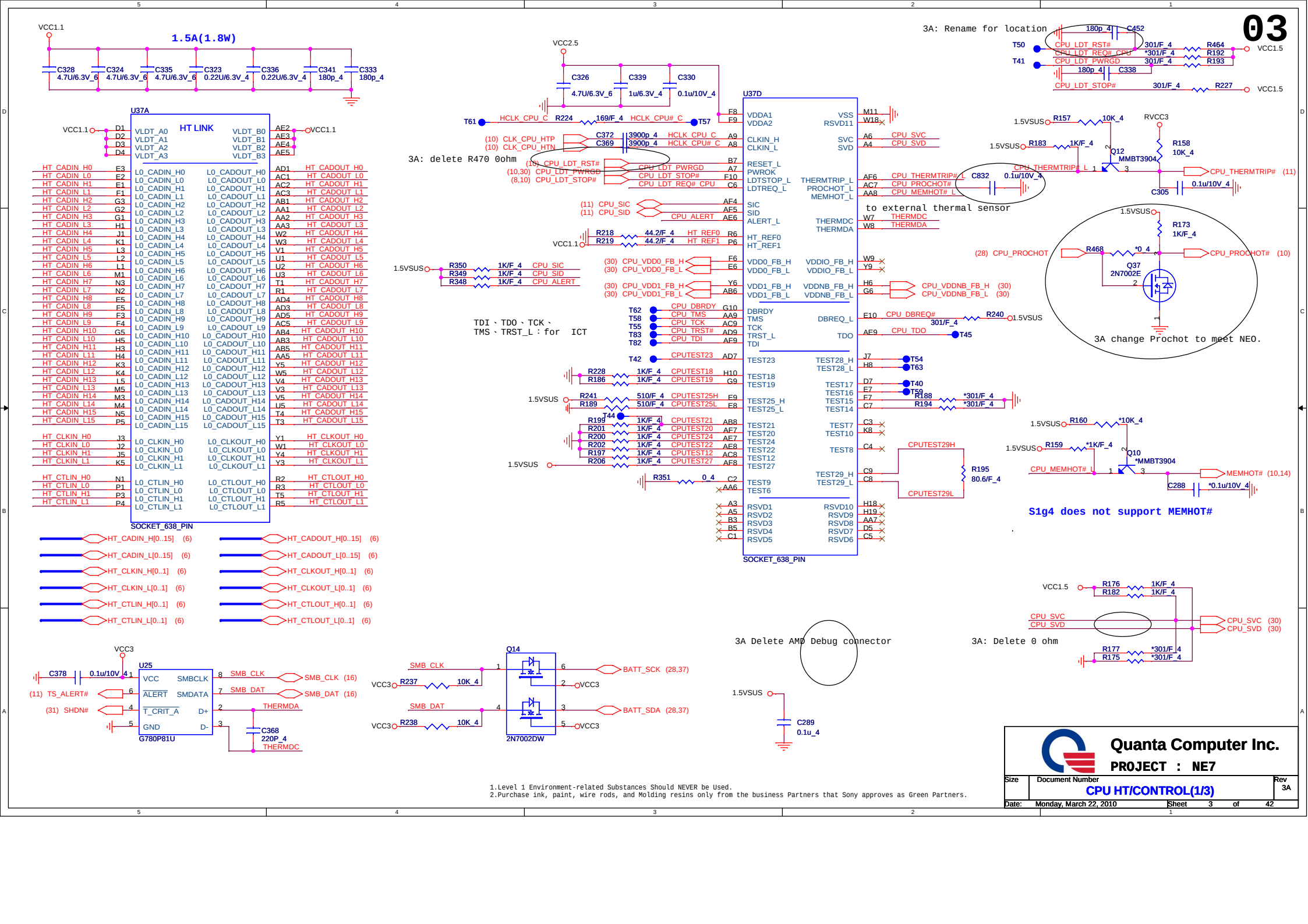
VCC1.1
1.5A(1.8W)
C328 4.7U/6.3V_6
C324 4.7U/6.3V_6
C335 4.7U/6.3V_6
C323 0.22U/6.3V_4
C336 0.22U/6.3V_4
C341 180p_4
C333 180p_4
U37A
HT LINK
VLDT_A0
VLDT_A1
VLDT_A2
VLDT_A3
VLDT_B0
VLDT_B1
VLDT_B2
VLDT_B3
VCC1.1
L0_CADIN_H0
L0_CADIN_L0
L0_CADIN_H1
L0_CADIN_L1
L0_CADIN_H2
L0_CADIN_L2
L0_CADIN_H3
L0_CADIN_L3
L0_CADIN_H4
L0_CADIN_L4
L0_CADIN_H5
L0_CADIN_L5
L0_CADIN_H6
L0_CADIN_L6
L0_CADIN_H7
L0_CADIN_L7
L0_CADIN_H8
L0_CADIN_L8
L0_CADIN_H9
L0_CADIN_L9
L0_CADIN_H10
L0_CADIN_L10
L0_CADIN_H11
L0_CADIN_L11
L0_CADIN_H12
L0_CADIN_L12
L0_CADIN_H13
L0_CADIN_L13
L0_CADIN_H14
L0_CADIN_L14
L0_CADIN_H15
L0_CADIN_L15
L0_CLKIN_H0
L0_CLKIN_L0
L0_CLKIN_H1
L0_CLKIN_L1
L0_CTLIN_H0
L0_CTLIN_L0
L0_CTLIN_H1
L0_CTLIN_L1
L0_CADOUT_H0
L0_CADOUT_L0
L0_CADOUT_H1
L0_CADOUT_L1
L0_CADOUT_H2
L0_CADOUT_L2
L0_CADOUT_H3
L0_CADOUT_L3
L0_CADOUT_H4
L0_CADOUT_L4
L0_CADOUT_H5
L0_CADOUT_L5
L0_CADOUT_H6
L0_CADOUT_L6
L0_CADOUT_H7
L0_CADOUT_L7
L0_CADOUT_H8
L0_CADOUT_L8
L0_CADOUT_H9
L0_CADOUT_L9
L0_CADOUT_H10
L0_CADOUT_L10
L0_CADOUT_H11
L0_CADOUT_L11
L0_CADOUT_H12
L0_CADOUT_L12
L0_CADOUT_H13
L0_CADOUT_L13
L0_CADOUT_H14
L0_CADOUT_L14
L0_CADOUT_H15
L0_CADOUT_L15
L0_CLKOUT_H0
L0_CLKOUT_L0
L0_CLKOUT_H1
L0_CLKOUT_L1
L0_CTLOUT_H0
L0_CTLOUT_L0
L0_CTLOUT_H1
L0_CTLOUT_L1
VCC1.1
SOCKET_638_PIN
HT_CADIN_H[0..15] (6)
HT_CADIN_L[0..15] (6)
HT_CLKIN_H[0..1] (6)
HT_CLKIN_L[0..1] (6)
HT_CTLIN_H[0..1] (6)
HT_CTLIN_L[0..1] (6)
HT_CADOUT_H[0..15] (6)
HT_CADOUT_L[0..15] (6)
HT_CLKOUT_H[0..1] (6)
HT_CLKOUT_L[0..1] (6)
HT_CTLOUT_H[0..1] (6)
HT_CTLOUT_L[0..1] (6)
VCC3
C378 0.1u/10V_4
U25
VCC
SMBCLK
ALERT
SMDATA
T_CRIT_A
D+
GND
D-
(11) TS_ALERT#
(31) SHDN#
SMB_CLK
SMB_DAT
THERMDA
THERMDC
C368 220P_4
G780P81U
VCC2.5
C326 4.7U/6.3V_6
C339 1u/6.3V_4
C330 0.1u/10V_4
T61
HCLK_CPU_C
R224 169/F_4
HCLK_CPU#_C
T57
(10) CLK_CPU_HTP
(10) CLK_CPU_HTN
C372 3900p_4
C369 3900p_4
HCLK_CPU_C
HCLK_CPU#_C
3A: delete R470 0ohm
(10) CPU_LDT_RST#
(10,30) CPU_LDT_PWRGD
(8,10) CPU_LDT_STOP#
CPU_LDT_REQ# CPU
(11) CPU_SIC
(11) CPU_SID
CPU_ALERT
R218 44.2/F_4
R219 44.2/F_4
HT_REF0
HT_REF1
1.5VSUS
R350 1K/F_4
R349 1K/F_4
R348 1K/F_4
CPU_SIC
CPU_SID
CPU_ALERT
(30) CPU_VDD0_FB_H
(30) CPU_VDD0_FB_L
(30) CPU_VDD1_FB_H
(30) CPU_VDD1_FB_L
TDI、TDO、TCK、
TMS、TRST_L：for ICT
T62 CPU_DBRDY
T58 CPU_TMS
T55 CPU_TCK
T83 CPU_TRST#
T82 CPU_TDI
T42 CPUTEST23
R228 1K/F_4 CPUTEST18
R186 1K/F_4 CPUTEST19
R241 510/F_4 CPUTEST25H
R189 510/F_4 CPUTEST25L
T44
R199 1K/F_4 CPUTEST21
R201 1K/F_4 CPUTEST20
R200 1K/F_4 CPUTEST24
R202 1K/F_4 CPUTEST22
R197 1K/F_4 CPUTEST12
R206 1K/F_4 CPUTEST27
R351 0_4
U37D
VDDA1
VDDA2
CLKIN_H
CLKIN_L
RESET_L
PWROK
LDTSTOP_L
LDTREQ_L
SIC
SID
ALERT_L
HT_REF0
HT_REF1
VDD0_FB_H
VDD0_FB_L
VDD1_FB_H
VDD1_FB_L
DBRDY
TMS
TCK
TRST_L
TDI
TEST23
TEST18
TEST19
TEST25_H
TEST25_L
TEST21
TEST20
TEST24
TEST22
TEST12
TEST27
TEST9
TEST6
RSVD1
RSVD2
RSVD3
RSVD4
RSVD5
VSS
RSVD11
SVC
SVD
THERMTRIP_L
PROCHOT_L
MEMHOT_L
THERMDC
THERMDA
VDDIO_FB_H
VDDIO_FB_L
VDDNB_FB_H
VDDNB_FB_L
DBREQ_L
TDO
TEST28_H
TEST28_L
TEST17
TEST16
TEST15
TEST14
TEST7
TEST10
TEST8
TEST29_H
TEST29_L
RSVD10
RSVD9
RSVD8
RSVD7
RSVD6
SOCKET_638_PIN
CPUTEST29H
CPUTEST29L
R195 80.6/F_4
3A: Rename for location
T50
T41
CPU_LDT_RST#
CPU_LDT_REQ# CPU
CPU_LDT_PWRGD
CPU_LDT_STOP#
180p_4 C452
C338
R464
R192
R193
R227
VCC1.5
1.5VSUS
R157 10K_4
RVCC3
R183 1K/F_4
Q12 MMBT3904
R158 10K_4
CPU_THERMTRIP# (11)
C305 0.1u/10V_4
CPU_THERMTRIP# L
C832 0.1u/10V_4
CPU_PROCHOT# (11)
CPU_MEMHOT# L
to external thermal sensor
R173 1K/F_4
(28) CPU_PROCHOT
R468 *0_4
Q37 2N7002E
3A change Prochot to meet NEO.
CPU_VDDNB_FB_H (30)
CPU_VDDNB_FB_L (30)
CPU_DBREQ#
R240
CPU_TDO
T45
T54
T63
T40
T59
R188 *301/F_4
R194 *301/F_4
R160 *10K_4
R159 *1K/F_4
Q10 *MMBT3904
MEMHOT# (10,14)
C288 *0.1u/10V_4
S1g4 does not support MEMHOT#
R176 1K/F_4
R182 1K/F_4
CPU_SVC (30)
CPU_SVD (30)
R177 *301/F_4
R175 *301/F_4
3A: Delete 0 ohm
Q14
2N7002DW
R237 10K_4
R238 10K_4
BATT_SCK (28,37)
BATT_SDA (28,37)
3A Delete AMD Debug connector
C289 0.1u_4
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PROJECT : NE7
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Document Number
CPU HT/CONTROL(1/3)
Rev 3A
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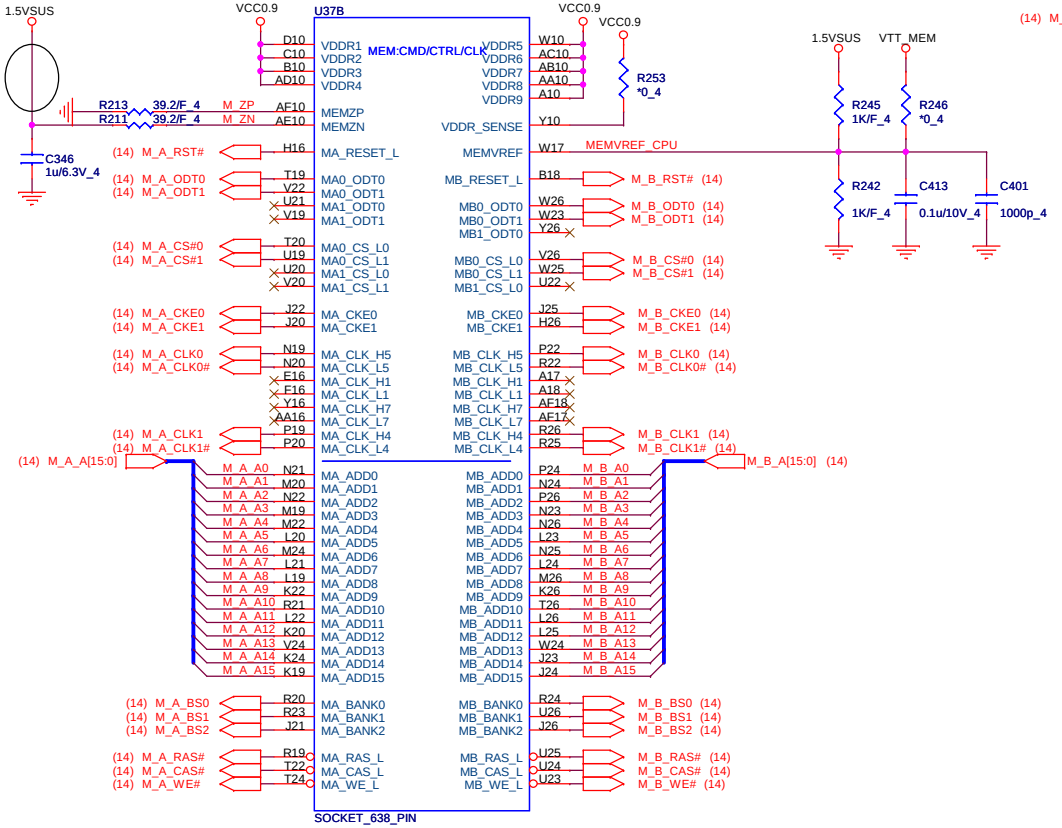
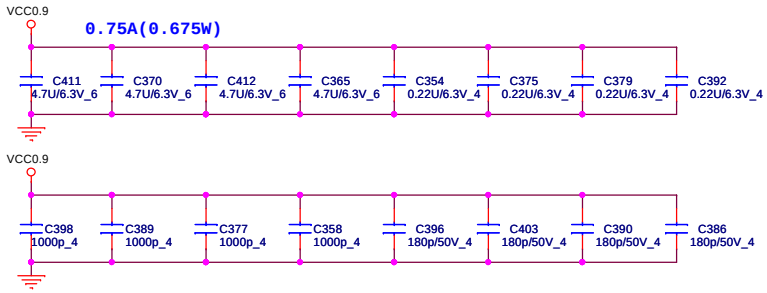
Processor Memory Interface

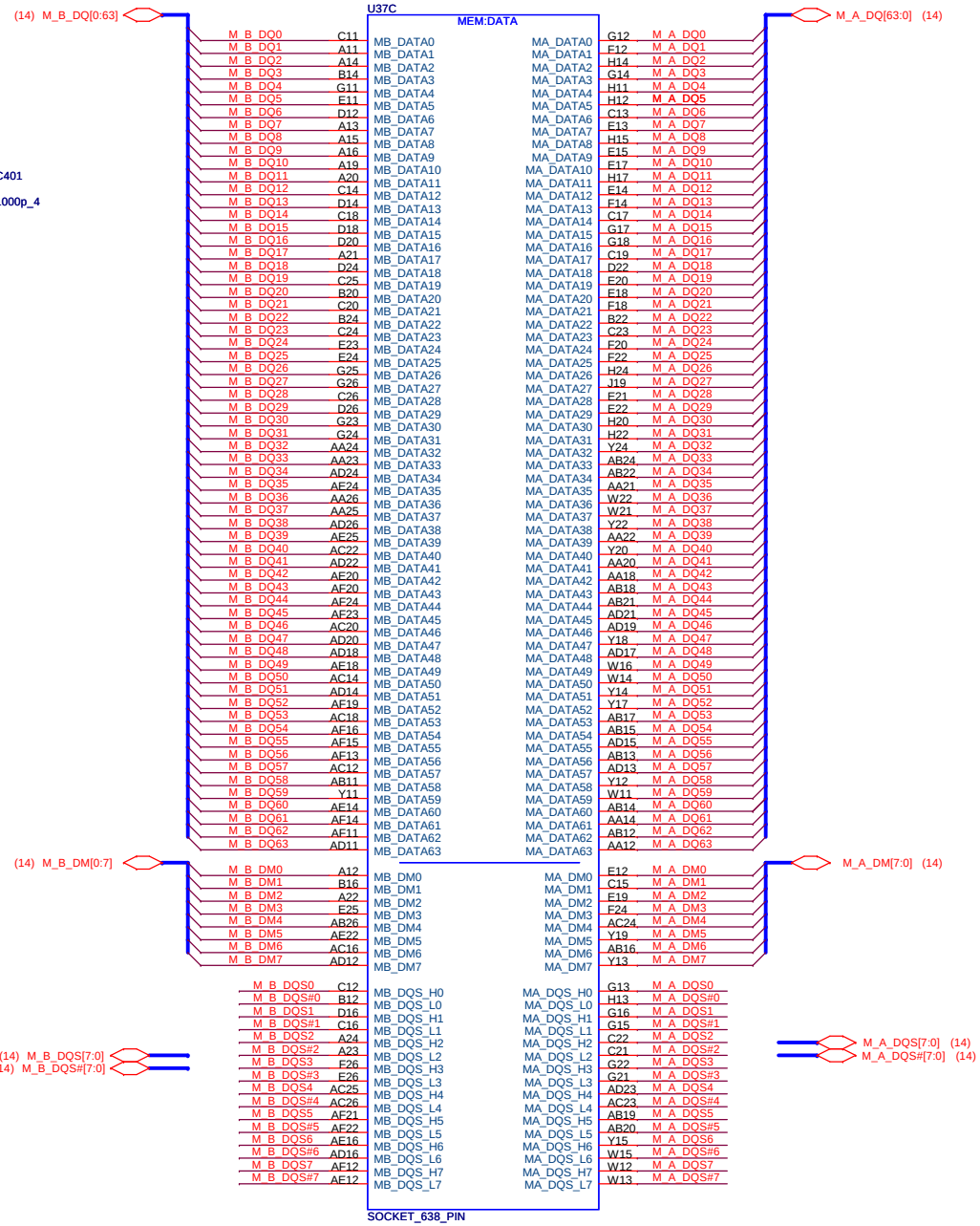
04

3A delete R208 0ohm

CPU_VDDR : 35W->0.9V
45W->1.05V







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Size	Document Number	Rev
	CPU MEMORY(2/3)	3A
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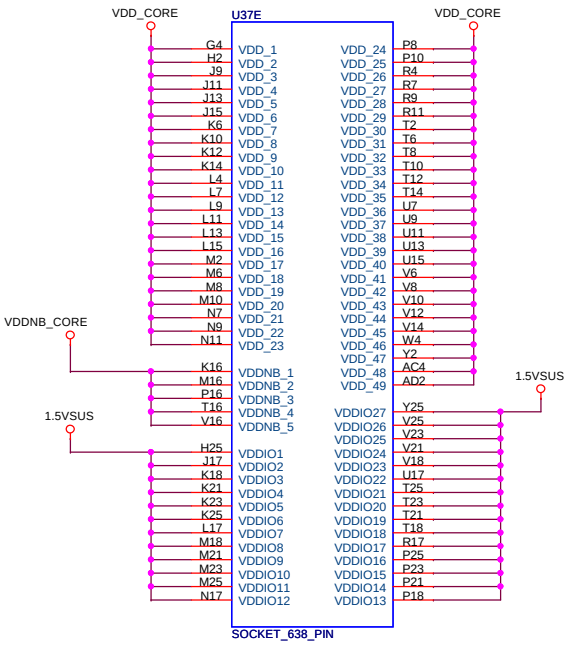

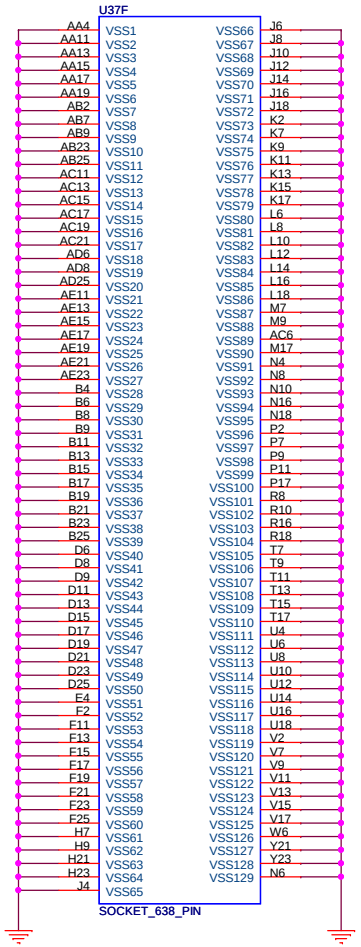

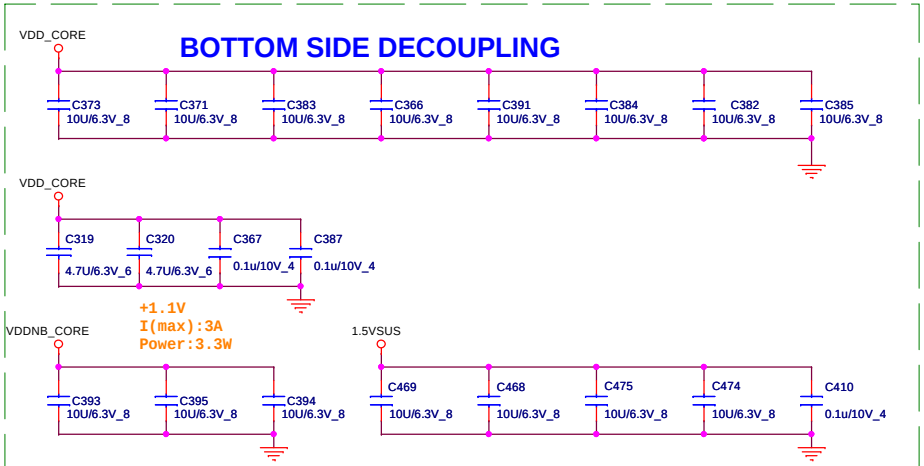

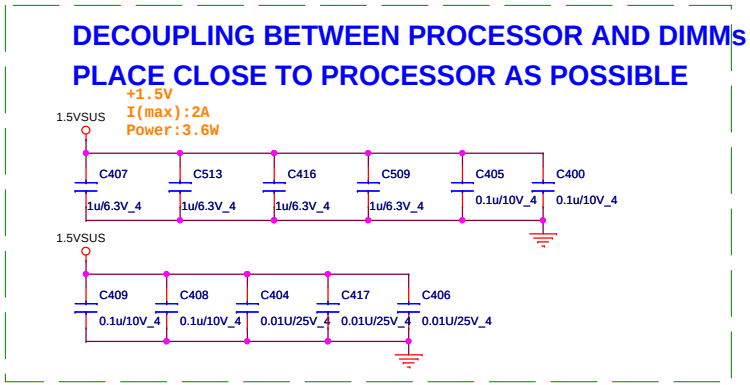

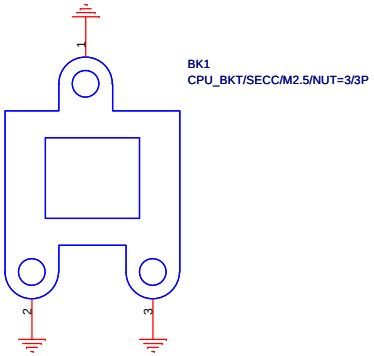

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PROJECT : NE7

Size	Document Number	Rev
	CPU POWER/GND(3/3)	3A
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(3) HT_CADIN_H[0:15]
(3) HT_CADIN_L[0:15]
(3) HT_CLKIN_H[0:1]
(3) HT_CLKIN_L[0:1]
(3) HT_CTLIN_H[0:1]
(3) HT_CTLIN_L[0:1]
(3) HT_CADOUT_H[0:15]
(3) HT_CADOUT_L[0:15]
(3) HT_CLKOUT_H[0:1]
(3) HT_CLKOUT_L[0:1]
(3) HT_CTLOUT_H[0:1]
(3) HT_CTLOUT_L[0:1]

U41A

PART 1 OF 6

HYPER TRANSPORT CPU I/F

HT_CADOUT_H0	Y25	HT_RXCAD0P	HT_TXCAD0P	D24	HT_CADIN_H0
HT_CADOUT_L0	Y24	HT_RXCAD0N	HT_TXCAD0N	D25	HT_CADIN_L0
HT_CADOUT_H1	V22	HT_RXCAD1P	HT_TXCAD1P	E24	HT_CADIN_H1
HT_CADOUT_L1	V23	HT_RXCAD1N	HT_TXCAD1N	E25	HT_CADIN_L1
HT_CADOUT_H2	V25	HT_RXCAD2P	HT_TXCAD2P	F24	HT_CADIN_H2
HT_CADOUT_L2	V24	HT_RXCAD2N	HT_TXCAD2N	F25	HT_CADIN_L2
HT_CADOUT_H3	U24	HT_RXCAD3P	HT_TXCAD3P	F23	HT_CADIN_H3
HT_CADOUT_L3	U25	HT_RXCAD3N	HT_TXCAD3N	F22	HT_CADIN_L3
HT_CADOUT_H4	T25	HT_RXCAD4P	HT_TXCAD4P	H23	HT_CADIN_H4
HT_CADOUT_L4	T24	HT_RXCAD4N	HT_TXCAD4N	H22	HT_CADIN_L4
HT_CADOUT_H5	P22	HT_RXCAD5P	HT_TXCAD5P	J25	HT_CADIN_H5
HT_CADOUT_L5	P23	HT_RXCAD5N	HT_TXCAD5N	J24	HT_CADIN_L5
HT_CADOUT_H6	P25	HT_RXCAD6P	HT_TXCAD6P	K24	HT_CADIN_H6
HT_CADOUT_L6	P24	HT_RXCAD6N	HT_TXCAD6N	K25	HT_CADIN_L6
HT_CADOUT_H7	N24	HT_RXCAD7P	HT_TXCAD7P	K23	HT_CADIN_H7
HT_CADOUT_L7	N25	HT_RXCAD7N	HT_TXCAD7N	K22	HT_CADIN_L7
HT_CADOUT_H8	AC24	HT_RXCAD8P	HT_TXCAD8P	F21	HT_CADIN_H8
HT_CADOUT_L8	AC25	HT_RXCAD8N	HT_TXCAD8N	G21	HT_CADIN_L8
HT_CADOUT_H9	AB25	HT_RXCAD9P	HT_TXCAD9P	G20	HT_CADIN_H9
HT_CADOUT_L9	AB24	HT_RXCAD9N	HT_TXCAD9N	H21	HT_CADIN_L9
HT_CADOUT_H10	AA24	HT_RXCAD10P	HT_TXCAD10P	J20	HT_CADIN_H10
HT_CADOUT_L10	AA25	HT_RXCAD10N	HT_TXCAD10N	J21	HT_CADIN_L10
HT_CADOUT_H11	Y22	HT_RXCAD11P	HT_TXCAD11P	J18	HT_CADIN_H11
HT_CADOUT_L11	Y23	HT_RXCAD11N	HT_TXCAD11N	K17	HT_CADIN_L11
HT_CADOUT_H12	W21	HT_RXCAD12P	HT_TXCAD12P	L19	HT_CADIN_H12
HT_CADOUT_L12	W20	HT_RXCAD12N	HT_TXCAD12N	J19	HT_CADIN_L12
HT_CADOUT_H13	V21	HT_RXCAD13P	HT_TXCAD13P	M19	HT_CADIN_H13
HT_CADOUT_L13	V20	HT_RXCAD13N	HT_TXCAD13N	L18	HT_CADIN_L13
HT_CADOUT_H14	U20	HT_RXCAD14P	HT_TXCAD14P	M21	HT_CADIN_H14
HT_CADOUT_L14	U21	HT_RXCAD14N	HT_TXCAD14N	P21	HT_CADIN_L14
HT_CADOUT_H15	U19	HT_RXCAD15P	HT_TXCAD15P	P18	HT_CADIN_H15
HT_CADOUT_L15	U18	HT_RXCAD15N	HT_TXCAD15N	M18	HT_CADIN_L15
HT_CLKOUT_H0	T22	HT_RXCLK0P	HT_TXCLK0P	H24	HT_CLKIN_H0
HT_CLKOUT_L0	T23	HT_RXCLK0N	HT_TXCLK0N	H25	HT_CLKIN_L0
HT_CLKOUT_H1	AB23	HT_RXCLK1P	HT_TXCLK1P	L21	HT_CLKIN_H1
HT_CLKOUT_L1	AA22	HT_RXCLK1N	HT_TXCLK1N	L20	HT_CLKIN_L1
HT_CTLOUT_H0	M22	HT_RXCTL0P	HT_TXCTL0P	M24	HT_CTLIN_H0
HT_CTLOUT_L0	M23	HT_RXCTL0N	HT_TXCTL0N	M25	HT_CTLIN_L0
HT_CTLOUT_H1	R21	HT_RXCTL1P	HT_TXCTL1P	P19	HT_CTLIN_H1
HT_CTLOUT_L1	R20	HT_RXCTL1N	HT_TXCTL1N	R18	HT_CTLIN_L1
HT_RXCALP	C23	HT_RXCALP	HT_TXCALP	B24	HT_TXCALP
HT_RXCALN	A24	HT_RXCALN	HT_TXCALN	B25	HT_TXCALN

R352 301/F_4 HT_RXCALP
HT_RXCALN
R355 301/F_4 HT_TXCALP
HT_TXCALN

RS880M

This block is for Side Port only , others can remove some components

U41D

PAR 4 OF 6

SBD_MEM/DVO_I/F

AB12	MEM_A0(NC)	MEM_DQ0/DVO_VSYNC(NC)	AA18	
AE16	MEM_A1(NC)	MEM_DQ1/DVO_HSYNC(NC)	AA20	
V11	MEM_A2(NC)	MEM_DQ2/DVO_DE(NC)	AA19	
AE15	MEM_A3(NC)	MEM_DQ3/DVO_D0(NC)	Y19	
AA12	MEM_A4(NC)	MEM_DQ4(NC)	V17	
AB16	MEM_A5(NC)	MEM_DQ5/DVO_D1(NC)	AA17	
AB14	MEM_A6(NC)	MEM_DQ6/DVO_D2(NC)	AA15	
AD14	MEM_A7(NC)	MEM_DQ7/DVO_D4(NC)	Y15	
AD13	MEM_A8(NC)	MEM_DQ8/DVO_D3(NC)	AC20	
AD15	MEM_A9(NC)	MEM_DQ9/DVO_D5(NC)	AD19	
AC16	MEM_A10(NC)	MEM_DQ10/DVO_D6(NC)	AE22	
AE13	MEM_A11(NC)	MEM_DQ11/DVO_D7(NC)	AC18	
AC14	MEM_A12(NC)	MEM_DQ12(NC)	AB20	
Y14	MEM_A13(NC)	MEM_DQ13/DVO_D9(NC)	AD22	
		MEM_DQ14/DVO_D10(NC)	AC22	
AD16	MEM_BA0(NC)	MEM_DQ15/DVO_D11(NC)	AD21	
AE17	MEM_BA1(NC)			
AD17	MEM_BA2(NC)	MEM_DQS0P/DVO_IDCKP(NC)	Y17	
		MEM_DQS0N/DVO_IDCKN(NC)	W18	
W12	MEM_RASb(NC)	MEM_DQS1P(NC)	AD20	
Y12	MEM_CASb(NC)	MEM_DQS1N(NC)	AE21	
AD18	MEM_WEB(NC)			
AB13	MEM_CSb(NC)	MEM_DM0(NC)	W17	
AB18	MEM_CKE(NC)	MEM_DM1/DVO_D8(NC)	AE19	
V14	MEM_ODT(NC)			
		IOPLLVDD18(NC)	AE23	
V15	MEM_CKP(NC)	IOPLLVDD(NC)	AE24	
W14	MEM_CKN(NC)			
		IOPLLVSS(NC)	AD23	
AE12	MEM_COMPP(NC)			
AD12	MEM_COMPN(NC)	MEM_VREF(NC)	AE18	

RS880M

26mA
VCC1.8
VCC1.1
15mA

3A change R422, R423 to short pad
delete R424, R425 0ohm.

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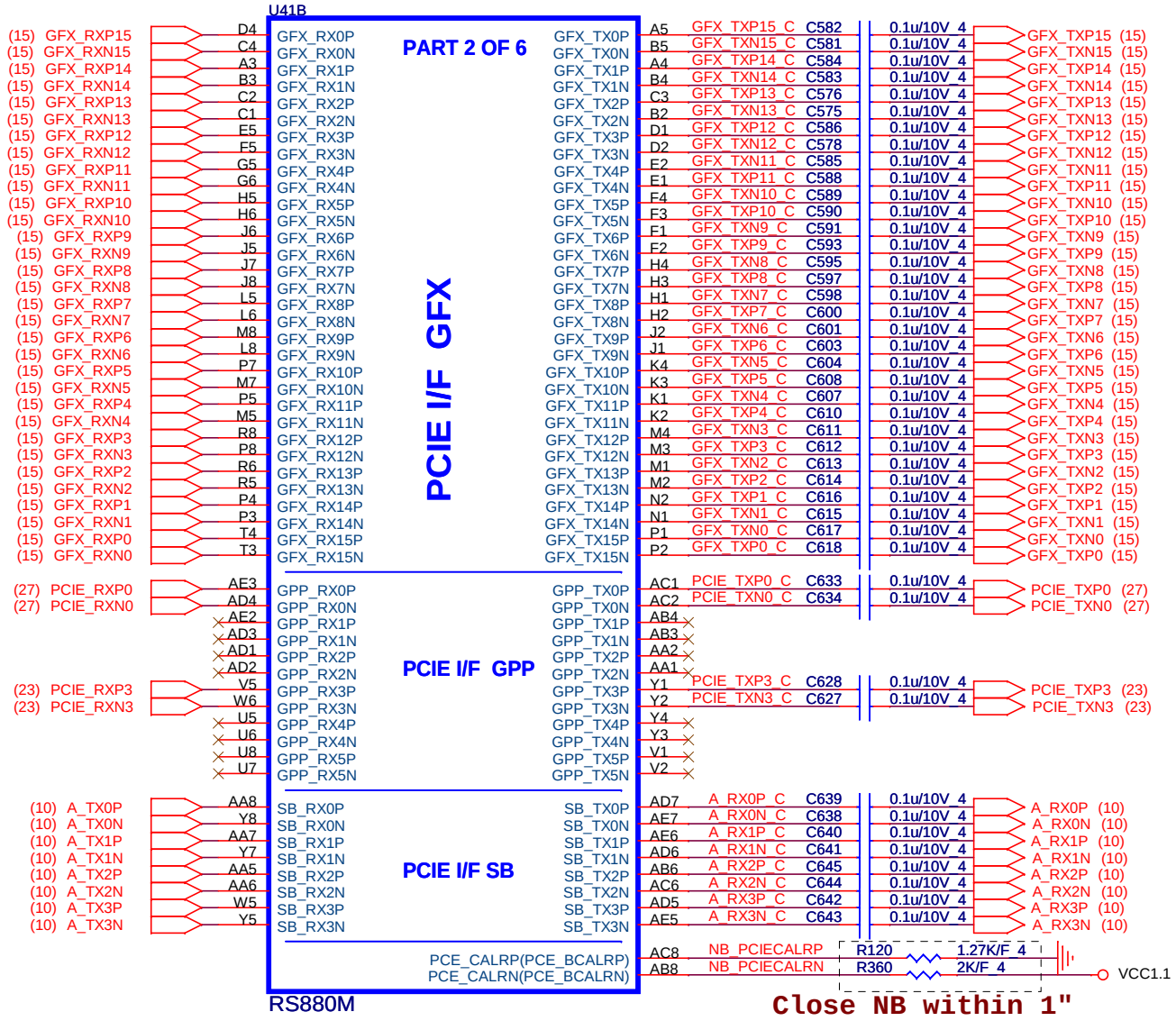
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	RS880M HT/SPMEM(1/4)	3A

Date: Monday, March 22, 2010 Sheet 6 of 42



GLAN

WLAN

Close NB within 1"

Layout Swap
TX11, TX10, TX9,
TX8,TX7,TX6, TX5,
TX4, TX3, TX2, TX0

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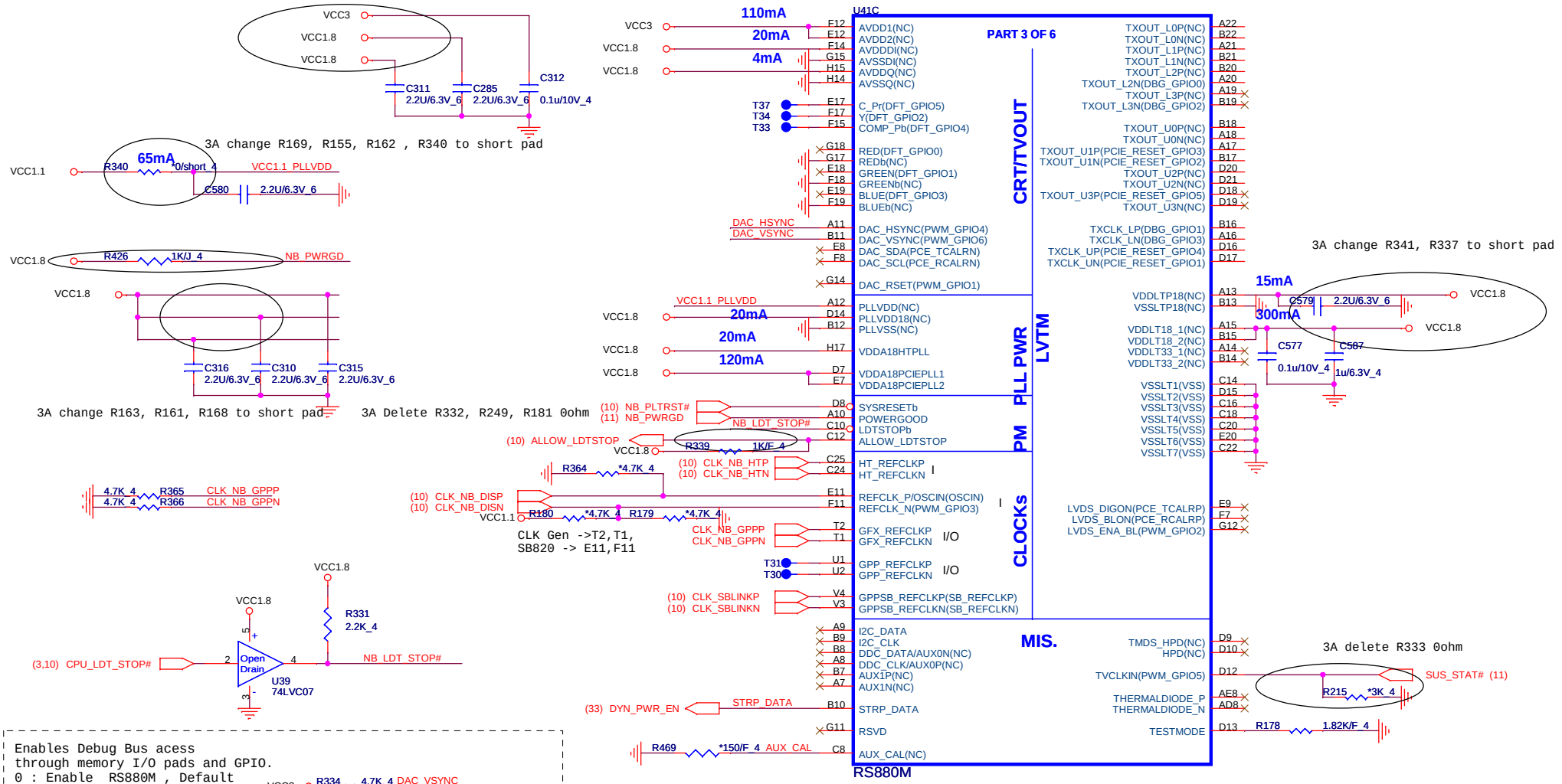
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	RS880M GFX/PCIE(2/4)	3A
Date: Monday, March 22, 2010	Sheet 7 of 42	



Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	RS880M SYSTEM(3/4)	3A
Date: Monday, March 22, 2010	Sheet 8 of 42	

RS880M/RX881 POWER DIFFERENCE TABLE

PIN NAME	RX881	RS880M	PIN NAME	RX881	RS880M
VDDHT	+1.1V	+1.1V	IOPLLVDD	NC	+1.1V
VDDHTRX	+1.1V	+1.1V	AVDD	NC	+3.3V
VDDHTTX	+1.1V	+1.1V	AVDDDI	NC	+1.8V
VDDA18PCIE	+1.8V	+1.8V	AVDDQ	NC	+1.8V
VDDG18	+1.8V	+1.8V	PLLVDD	NC	+1.1V
VDD18_MEM	NC	+1.8V	PLLVDD18	NC	+1.8V
VDDPCIE	+1.1V	+1.1V	VDDA18PCIEPLL	+1.8V	+1.8V
VDDC	+1.1V	+1.1V	VDDA18HTPLL	+1.8V	+1.8V
VDD_MEM	NC	+1.5V	VDDLTP18	NC	+1.8V
VDDG33	NC	+3.3V	VDDLT18	NC	+1.8V
IOPLLVDD18	NC	+1.8V	VDDLT33	NC	NC

U41F — PART 6/6 — GROUND

3A change L23, L24, L29 to short pad

3A delete R171 0ohm

VCC1.1 0.68A 600mA: C252 4.7U/6.3V_6, C267 0.1u/10V_4, C270 0.1u/10V_4, C274 0.1u/10V_4

700mA: C299 4.7U/6.3V_6, C290 0.1u/10V_4, C294 0.1u/10V_4, C304 0.1u/10V_4

0.68A 400mA: C246 4.7U/6.3V_6, C259 0.1u/10V_4, C255 0.1u/10V_4, C268 0.1u/10V_4

0.64A VCC1.8 700mA: C254 4.7U/6.3V_6, C243 4.7U/6.3V_6, C247 0.1u/10V_4, C236 0.1u/10V_4, C279 0.1u/10V_4, C250 0.1u/10V_4

3A change L21, R156 to short pad

0.005A VCC1.8 C297 0.1u/10V_4 10mA

3A Delete R427, R428 0ohm.

U41E — PART 5/6 — POWER — RS880M

VDDHT_1 J17, VDDHT_2 K16, VDDHT_3 L16, VDDHT_4 M16, VDDHT_5 P16, VDDHT_6 R16, VDDHT_7 T16

VDDHTRX_1 H18, VDDHTRX_2 G19, VDDHTRX_3 F20, VDDHTRX_4 E21, VDDHTRX_5 D22, VDDHTRX_6 B23, VDDHTRX_7 A23

VDDHTTX_1 AE25, VDDHTTX_2 AD24, VDDHTTX_3 AC23, VDDHTTX_4 AB22, VDDHTTX_5 AA21, VDDHTTX_6 Y20, VDDHTTX_7 W19, VDDHTTX_8 V18, VDDHTTX_9 U17, VDDHTTX_10 T17, VDDHTTX_11 R17, VDDHTTX_12 P17, VDDHTTX_13 M17

VDDA18PCIE_1 J10, VDDA18PCIE_2 P10, VDDA18PCIE_3 K10, VDDA18PCIE_4 M10, VDDA18PCIE_5 L10, VDDA18PCIE_6 W9, VDDA18PCIE_7 H9, VDDA18PCIE_8 T10, VDDA18PCIE_9 R10, VDDA18PCIE_10 Y9, VDDA18PCIE_11 AA9, VDDA18PCIE_12 AB9, VDDA18PCIE_13 AD9, VDDA18PCIE_14 AE9, VDDA18PCIE_15 U10

VDDG18_1(VDD18_1) F9, VDDG18_2(VDD18_2) G9, VDD18_MEM1(NC) AE11, VDD18_MEM2(NC) AD11

VDDPCIE_1 A6, VDDPCIE_2 B6, VDDPCIE_3 C6, VDDPCIE_4 D6, VDDPCIE_5 E6, VDDPCIE_6 F6, VDDPCIE_7 G7, VDDPCIE_8 H8, VDDPCIE_9 J9, VDDPCIE_10 K9, VDDPCIE_11 M9, VDDPCIE_12 L9, VDDPCIE_13 P9, VDDPCIE_14 R9, VDDPCIE_15 T9, VDDPCIE_16 V9, VDDPCIE_17 U9

VDDC_1 K12, VDDC_2 J14, VDDC_3 U16, VDDC_4 J11, VDDC_5 K15, VDDC_6 M12, VDDC_7 L14, VDDC_8 L11, VDDC_9 M13, VDDC_10 M15, VDDC_11 N12, VDDC_12 N14, VDDC_13 P11, VDDC_14 P13, VDDC_15 P14, VDDC_16 R12, VDDC_17 R15, VDDC_18 T11, VDDC_19 T15, VDDC_20 U12, VDDC_21 T14, VDDC_22 J16

VDD_MEM1(NC) AE10, VDD_MEM2(NC) AA11, VDD_MEM3(NC) Y11, VDD_MEM4(NC) AD10, VDD_MEM5(NC) AB10, VDD_MEM6(NC) AC10

VDDG33_1(NC) H11, VDDG33_2(NC) H12

VDD18_MEM For UMA RS880 only
Not applicable to RX881
memory I/O transform

VDDPCIE - PCIE-E Main power: VCC1.1 — C301 0.1u/10V_4, C263 0.1u/10V_4, C260 1u/6.3V_4, C296 1u/6.3V_4, C314 4.7U/6.3V_6 — 1.1 or 2.5A??

VDDC - Core Logic power: DYN_VCC1.1 7.6A — C360 0.1u/10V_4, C266 0.1u/10V_4, C256 0.1u/10V_4, C355 *1u/6.3V_4, C277 *1u/6.3V_4, C362 *10U/6.3V/X5R_8, C364 10U/6.3V_8, C363 10U/6.3V_8

C258 0.1u/10V_4, C262 0.1u/10V_4, C273 0.1u/10V_4

3A Delete R429, R430 0ohm.

3A change R167 to short pad: RS880 — VCC3 60mA — C300 0.1u/10V_4, C295 0.1u/10V_4

	VDD_MEM
W Side-Port	VCC1.5
W/O Side-Port	GND

	VDD18_MEM
W Side-Port	VCC1.8
W/O Side-Port	GND

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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	RS880M POWER(4/4)	3A

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Strap Table

PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4
ALLOW PCIE Gen2	Watchdog Timer Enable	USE DEBUG STRAPS	non_Fusion CLOCK MODE DEFAULT
FORCE PCIE Gen1 DEFAULT	Watchdog Timer Disable DEFAULT	IGNORE DEBUG STRAPS DEFAULT	Fusion CLOCK MODE

RTC

PCI Strap

SB820 Part 1 of 5

SB8xx only supports 2 GPP port 2 &3 is not supported.

3A delete RP36, RP42, RP38, RP26, RP43, RP41, RP35 0ohm

GPP4、5 used for NB PCIE

3A：Delete R358 0ohm

Low=0.9V, High=1.05V

3A：change R247, R305 from 100k to 10Kohm

LPCLK0	LPCLK1
H=Enable embedded EC	H=Enable Internal CLK Gen.
L=Disable embedded EC	L=Disable Internal CLK Gen.

INTRUDER_ALERT# Southbridge has 50-k ohm internal pull-up to VBAT

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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	SB820 PCI/CLK/LPC(1/4)	3A

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U40D

SB820
Part 4 of 5

PCI_PME#/GEVENT4#
RI#/GEVENT22#
SPI_CS3#/GBE_STAT1/GEVENT21#
SLP_S3#
SLP_S5#
PWR_BTN#
PWR_GOOD
SUS_STAT#
TEST0
TEST1/TMS
TEST2
GA20IN/GEVENT0#
KBRST#/GEVENT1#
LPC_PME#/GEVENT3#
LPC_SMI#/GEVENT23#
GEVENT5#
SYS_RESET#/GEVENT19#
WAKE#/GEVENT8#
IR_RX1/GEVENT20#
THRMTRIP#/SMBALERT#/GEVENT2#
NB_PWRGD
RSMRST#

ACPI / WAKE UP EVENTS

(28) PM_SLP_S3#
(28) PM_SLP_S5#
(28) DNBSWON#
HW_PWRGD
(8) SUS_STAT#
T51
T78
T79
T47
(28) GATEA20
(28) EC_KBRST#
(28) ECSCI#
(28) ECSMI#
T49
T85
(27) WAKE#
RVCC3
R185
10K_4
(3) CPU_THERMTRIP#
(8) NB_PWRGD
(28) RSMRST#

USB 1.1 USB MISC

USBCLK/14M_25M_48M_OSC
USB_RCOMP
T86
USB_RCOMP_SB
R210
11.8K/F_6
USB_FSD1P/GPIO186
USB_FSD1N
USB_FSD0P/GPIO185
USB_FSD0N

USB 2.0

USB_HSD13P
USB_HSD13N
USB_HSD12P
USB_HSD12N
USB_HSD11P
USB_HSD11N
USB_HSD10P
USB_HSD10N
USB_HSD9P
USB_HSD9N
USB_HSD8P
USB_HSD8N
USB_HSD7P
USB_HSD7N
USB_HSD6P
USB_HSD6N
USB_HSD5P
USB_HSD5N
USB_HSD4P
USB_HSD4N
USB_HSD3P
USB_HSD3N
USB_HSD2P
USB_HSD2N
USB_HSD1P
USB_HSD1N
USB_HSD0P
USB_HSD0N

USBP13+ (25)
USBP13- (25)
Blue Tooth
USBP12+ (24)
USBP12- (24)
Card Reader
USBP10+ (23)
USBP10- (23)
WiMAX
USBP7+ (21)
USBP7- (21)
Camera
USBP3+ (39)
USBP3- (39)
USB_PORT #3(Small board)
USBP2+ (39)
USBP2- (39)
USB_PORT #2(Samll Board)
USBP1+ (39)
USBP1- (39)
USB_PORT #1(Samll Board)
USBP0+ (29)
USBP0- (29)
USB_PORT #0(M/B)

GPIO

CLK_REQ4#/SATA_IS0#/GPIO64
CLK_REQ3#/SATA_IS1#/GPIO63
SMARTVOLT1/SATA_IS2#/GPIO50
CLK_REQ0#/SATA_IS3#/GPIO60
SATA_IS4#/FANOUT3/GPIO55
SATA_IS5#/FANIN3/GPIO59
SPKR/GPIO66
SCL0/GPIO43
SDA0/GPIO47
SCL1/GPIO227
SDA1/GPIO228
CLK_REQ2#/FANIN4/GPIO62
CLK_REQ1#/FANOUT4/GPIO61
IR_LED#/LLB#/GPIO184
SMARTVOLT2/SHUTDOWN#/GPIO51
DDR3_RST#/GEVENT7#
GBE_LED0/GPIO183
GBE_LED1/GEVENT9#
GBE_LED2/GEVENT10#
GBE_STAT0/GEVENT11#
CLK_REQG#/GPIO65/OSCIN

(23) PCIE_REQ_MINI#
(27) PCIE_REQ_LAN#
(10) SB_GPIO_RST#
T118
VCC3
R216 4.7K_4 SUS_STAT#
R142 2.2K_4 PCLK_SMB
R141 2.2K_4 PDAT_SMB
R118 10K_4 PCIE_REQ_MINI#
R128 10K_4 PCIE_REQ_LAN#
(26) PCBEEP
(14) PCLK_SMB
(14) PDAT_SMB
R203 2.2K_4
R207 2.2K_4
RVCC3
T72
(16) PCIE_REQ_GFX#

USB OC

BLINK/USB_OC7#/GEVENT18#
USB_OC6#/IR_TX1/GEVENT6#
USB_OC5#/IR_TX0/GEVENT17#
USB_OC4#/IR_RX0/GEVENT16#
USB_OC3#/AC_PRES/TDO/GEVENT15#
USB_OC2#/TCK/GEVENT14#
USB_OC1#/TDI/GEVENT13#
USB_OC0#/TRST#/GEVENT12#

(3) TS_ALERT#
T80
T48
T73
USBOC3#
USBOC2#
USBOC1#
USBOC0#
(29) USBOC1#
(29) USBOC0#

For EMI

*EMI@15P/50V_4
C574
ACZ_BCLK

HD AUDIO

AZ_BITCLK
AZ_SDOUT
AZ_SDIN0/GPIO167
AZ_SDIN1/GPIO168
AZ_SDIN2/GPIO169
AZ_SDIN3/GPIO170
AZ_SYNC
AZ_RST#

(26) ACZ_BCLK
(26) ACZ_SDOUT
(26) ACZ_SDIN0
R338 33/F_4 ACZ_BCLK_R
R344 33/F_4 ACZ_SDOUT_R
T87
T43
(26) ACZ_SYNC
(26,28) ACZ_RST#
R346 33/F_4 ACZ_SYNC_R
R353 33/F_4 ACZ_RST#_R

GBE LAN

GBE_COL
GBE_CRS
GBE_MDCK
GBE_MDIO
GBE_RXCLK
GBE_RXD3
GBE_RXD2
GBE_RXD1
GBE_RXD0
GBE_RXCTL/RXDV
GBE_RXERR
GBE_TXCLK
GBE_TXD3
GBE_TXD2
GBE_TXD1
GBE_TXD0
GBE_TXCTL/TXEN
GBE_PHY_PD
GBE_PHY_RST#
GBE_PHY_INTR

R129 10K_4
R130 10K_4
R133 10K_4
RVCC3
R342 *10K_4
R345 10K_4
ACZ_SDOUT_R
R134 10K_4
R137 10K_4

AZ_SDOUT
H=Low performance mode
L=High performance mode

EMBEDDED CTRL

PS2_DAT/SDA4/GPIO187
PS2_CLK/SCL4/GPIO188
SPI_CS2#/GBE_STAT2/GPIO166
FC_RST#/GPO160
PS2KB_DAT/GPIO189
PS2KB_CLK/GPIO190
PS2M_DAT/GPIO191
PS2M_CLK/GPIO192

T52
ADP_PRES0
T56

SCL2/GPIO193
SDA2/GPIO194
SCL3_LV/GPIO195
SDA3_LV/GPIO196
EC_PWM0/EC_TIMER0/GPIO197
EC_PWM1/EC_TIMER1/GPIO198
EC_PWM2/EC_TIMER2/GPIO199
EC_PWM3/EC_TIMER3/GPIO200

SB_SCL2 R327 10K_4
SB_SDA2 R226 10K_4
RVCC3
CPU_SIC (3)
CPU_SID (3)
GPIO199 R225 *10K_4
GPIO200 R205 2.2K_4
RVCC3

EMBEDDED CTRL

KSI_0/GPIO201
KSI_1/GPIO202
KSI_2/GPIO203
KSI_3/GPIO204
KSI_4/GPIO205
KSI_5/GPIO206
KSI_6/GPIO207
KSI_7/GPIO208
KSO_0/GPIO209
KSO_1/GPIO210
KSO_2/GPIO211
KSO_3/GPIO212
KSO_4/GPIO213
KSO_5/GPIO214
KSO_6/GPIO215
KSO_7/GPIO216
KSO_8/GPIO217
KSO_9/GPIO218
KSO_10/GPIO219
KSO_11/GPIO220
KSO_12/GPIO221
KSO_13/GPIO222
KSO_14/GPIO223
KSO_15/GPIO224
KSO_16/GPIO225
KSO_17/GPIO226

SB820M A12

	GPIO200, GPIO199
PULL HIGH	H, H=Reserved H, L=SPI ROM
PULL LOW	L, H=LPC ROM(Default) L, L=FWH ROM

Reserved for RSMRST#

RVCC3
D27
*RB501V-40
C570
*2.2u/6.3V_6
R204
*8.2K_4
(31) 5VPGD
R209
*332K/F_4
RSMRST#_R
U38
*TC7SH08FU
RSMRST#
20ms Dealy?
C349
*0.1u/10V_4
R330
*10K/F_4

3A：change R196, R198 from 100k to 10Kohm

VCC3
R196 10K_4
R198 10K_4
C573 0.1u/10V_4
(28,32,34,35,36) PGOOD
(33) DYN_PWRGD
U24
TC7SH08FU
HW_PWRGD (21,28)
R363 10K_4

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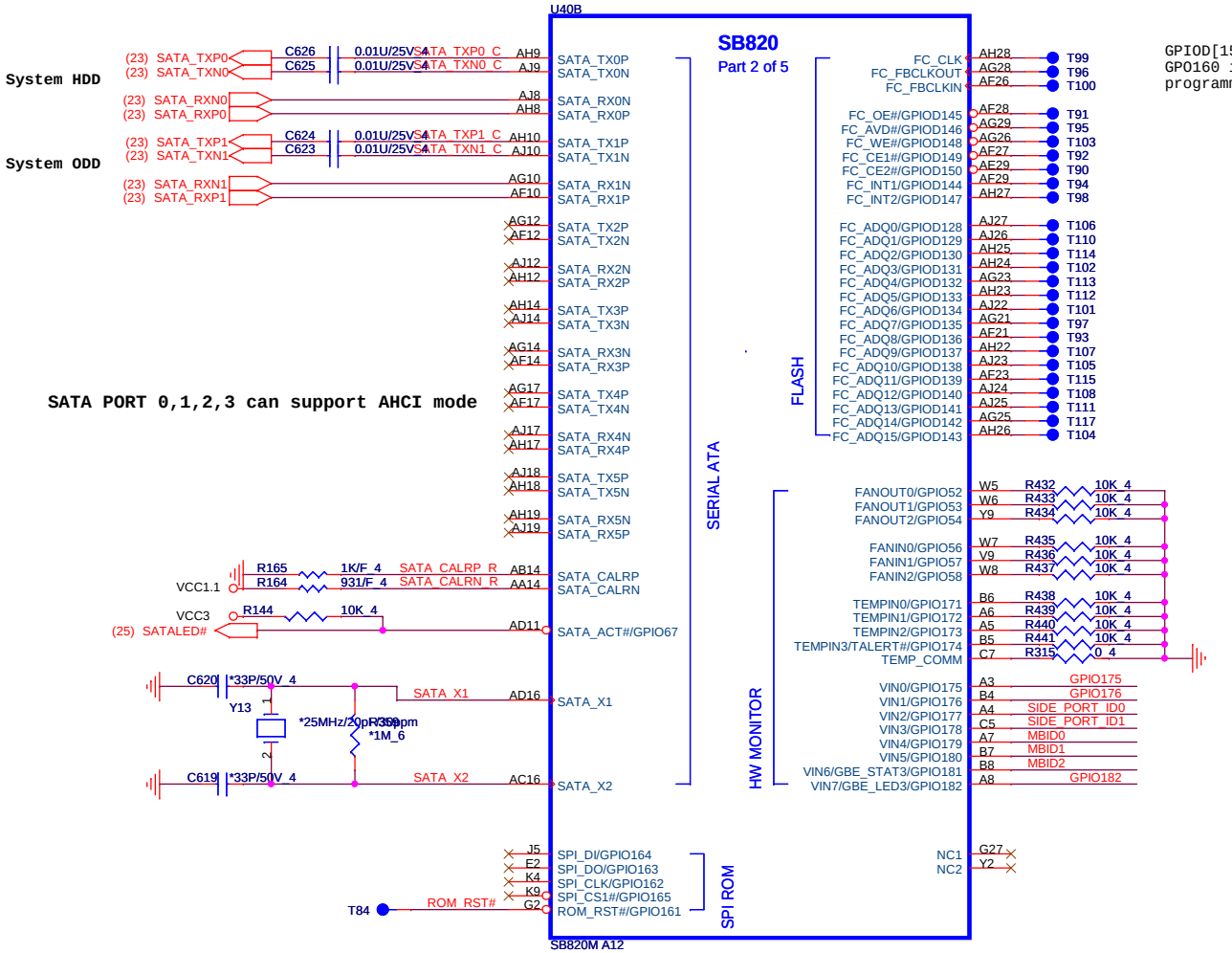
Quanta Computer Inc.
PROJECT : NE7

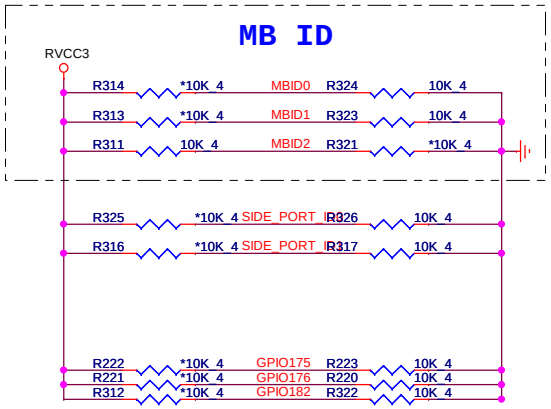
Size	Document Number	Rev
	SB820 AUDIO/USB(3/4)	3A
Date: Monday, March 22, 2010	Sheet 11 of 42	



GPIOD[150:128] are open drain GPIO pins where as GPO160 is an open drain GPO pin. These pins are not programmed to GPIO mode by default.

ID2	ID1	ID0	
0	0	0	Danube UMA
0	0	1	Danube UMA+Side port
0	1	0	Danube+Park XT
0	1	1	Danube+Madison LP
1	0	0	Danube+M92 XTX
1	0	1	
1	1	0	
1	1	1	

	NON	SAMSUNG	HYNIX	
SP ID0	0	1	0	1
SP ID1	0	0	1	1



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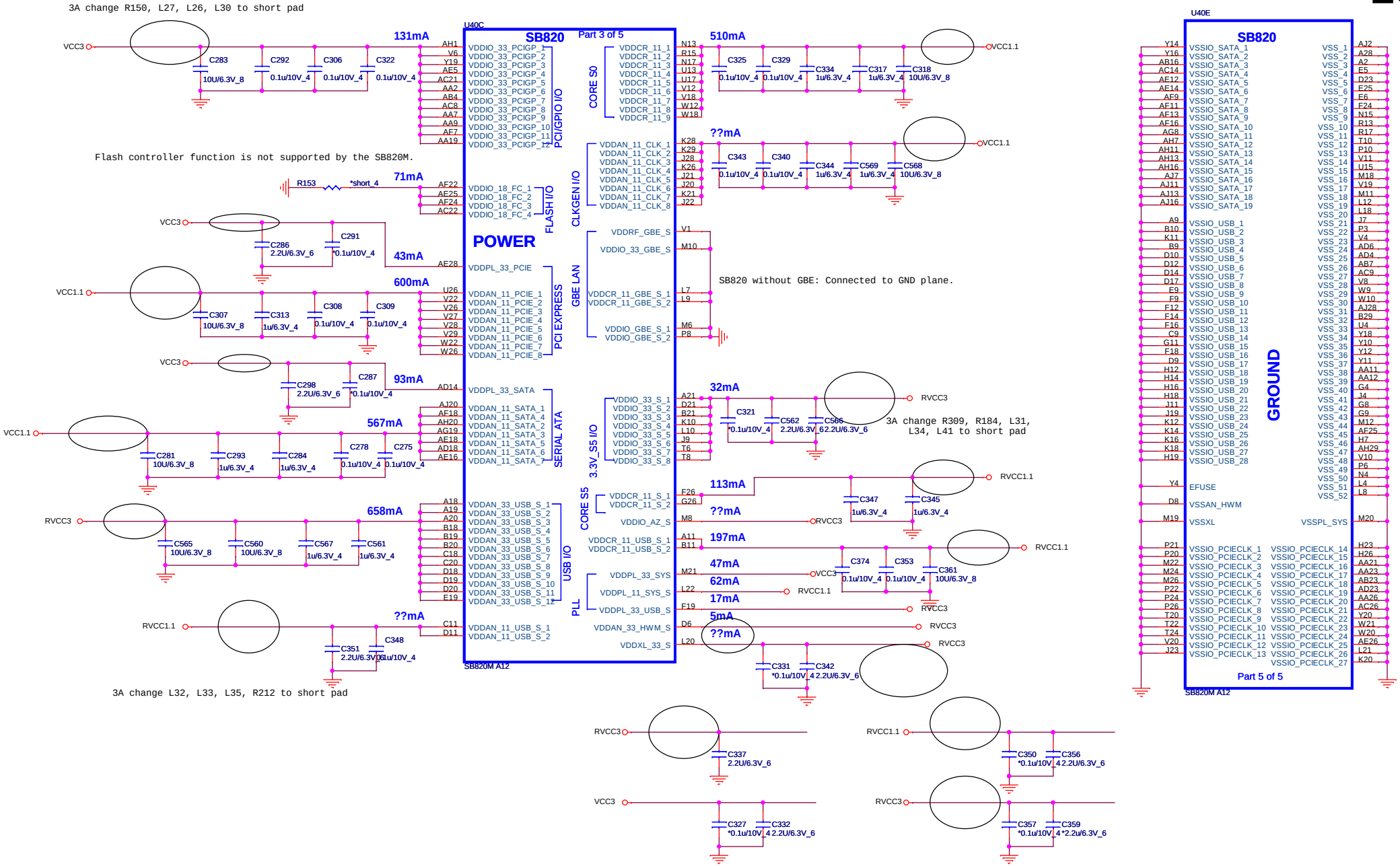
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	SB820 SATA(2/4)	3A
Date: Monday, March 22, 2010	Sheet 12 of 42	

3A change R150, L27, L26, L30 to short pad

3A change R172, L42, L28, L25 to short pad



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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	SB820 POWER(4/4)	3A
Date: Monday, March 22, 2010	Sheet 13 of 42	

(H=9.2mm)

CN7

PC3-XXXX DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM1

LTK DDRRK-20401-TP8D

8mm : DGMK4000087
9.2mm : DGMK4000029

(H=5.2mm)

CN8

PC3-XXXX DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM0

LTK DDRRK-20401-TP4B

4mm : DGMK4000005
5.2mm : DGMK4000028

Place these Caps near So-Dimm1.

Place these Caps near So-Dimm0.

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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	DDR3 SODIMMX2	3A

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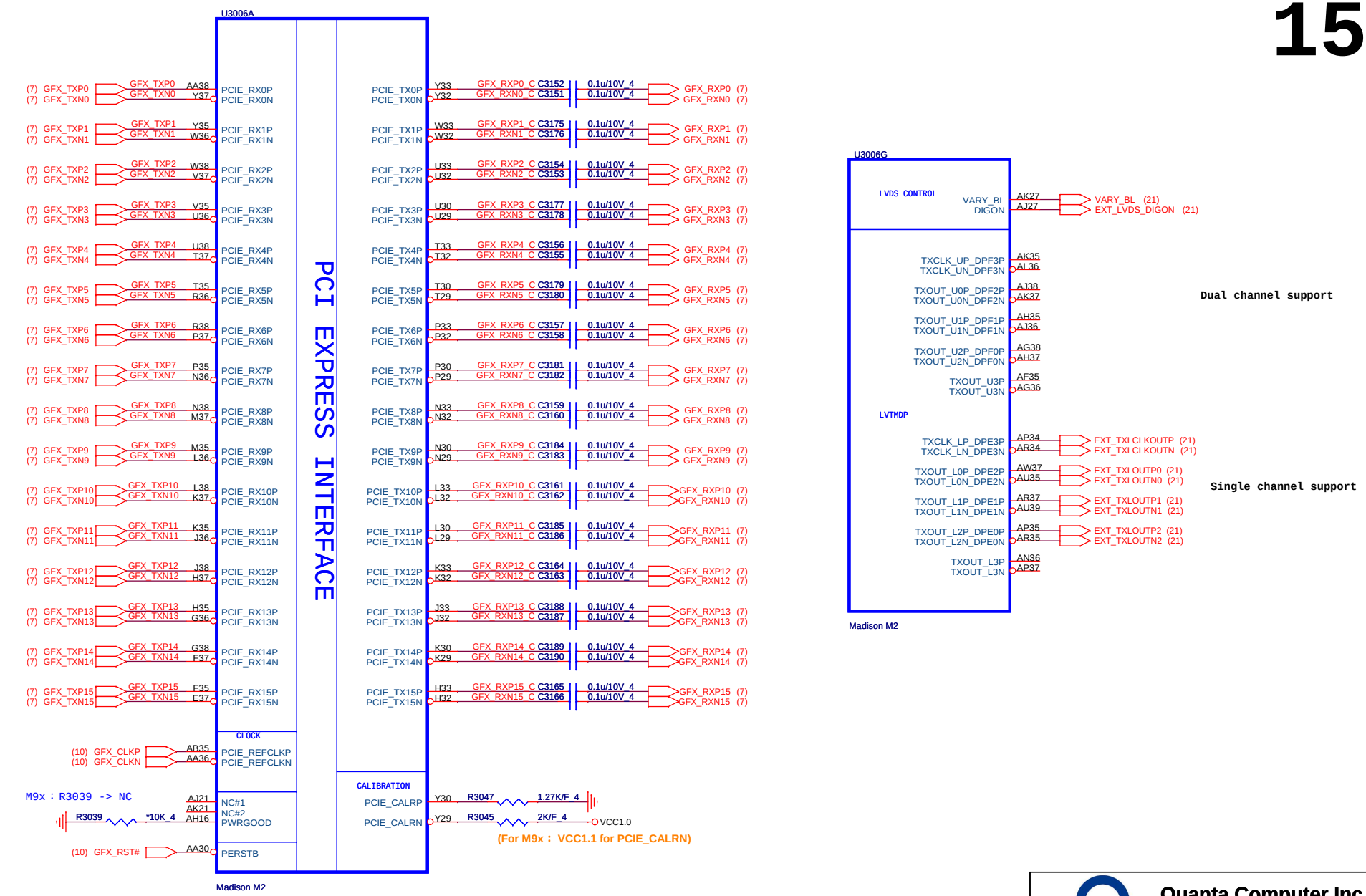

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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	ATI PCIE/LVDS	3A
Date: Monday, March 22, 2010	Sheet 15 of 42	

MEMID[3:0]	Vendor	Type	Vendor P/N
0000			
0001	Hinyx	64*16-800MHZ	H5TQ1G63BFR-12C AKD5LZGTW00
0010	SamSung	64*16-800MHZ	K4W1G1646E-HC12 AKD5LGGT502
0011	Ati	64*16-800MHZ	23EY2387MA-12 AKD5LGGT701
0100			Reserved
0101			Reserved
0110			Reserved
0111			Reserved
1000			Reserved
1001			Reserved
1010			Reserved
1011			Reserved
1100			Reserved
1101			Reserved
1110			Reserved
1111			Reserved

Samsung 64*16-900MHZ K4W1G1646E-HC11

GPIO0 : PCIE FULL TX OUTPUT SWING
GPIO1 : PCIE TRANSMITTER DE-EMPHASIS ENABLED
GPIO2 : BIF_GEN2_EN_A
GPIO8 : RESERVED
GPIO9 : VGA ENABLED
GPIO[13:11] : SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT
V2SYNC : IGNORE VIP DEVICE STRAPS
H2SYNC : 0
GENERICC : 0
HSYNC : 1 (AUDIO FOR BOTH DP AND HDMI)
VSYNC : 1 (AUDIO FOR BOTH DP AND HDMI)

VCC3_M92
ATI feedback debug mode
R3090 10K_4 GFX_GPIO0
R3027 10K_4 GFX_GPIO1
R3036 10K_4 GPIO9 X
R3086 10K_4 GPIO12 0
R3088 10K_4 GPIO13 0 for mem size AP
R3025 10K_4 GPIO11 1

3A : Adding GPIO3、4 for VGA thermal sensor
(3) SMB_DAT R3116 0_4 GFX_GPIO3
(3) SMB_CLK R3117 0_4 GFX_GPIO4

U3006B
MUTI GFX
DVPCNTL_MVP_0 AR8
DVPCNTL_MVP_1 AU8
DVPCNTL_0 AP8
DVPCNTL_1 AW8
DVPCNTL_2 AR3
DVPCLK AR1
DVPDATA_0 AU1
DVPDATA_1 AU3
DVPDATA_2 AW3
DVPDATA_3 AP6
DVPDATA_4 AW5
DVPDATA_5 AU5
DVPDATA_6 AR6
DVPDATA_7 AW6
DVPDATA_8 AU6
DVPDATA_9 AT7
DVPDATA_10 AV7
DVPDATA_11 AN7
DVPDATA_12 AV9
DVPDATA_13 AT9
DVPDATA_14 AR10
DVPDATA_15 AW10
DVPDATA_16 AU10
DVPDATA_17 AP10
DVPDATA_18 AV11
DVPDATA_19 AT11
DVPDATA_20 AR12
DVPDATA_21 AW12
DVPDATA_22 AU12
DVPDATA_23 AP12

VCC1.8 R3093 *10K_4 R3097 *10K_4 R3095 10K_4 R3099 *10K_4 MEMID0
MEMID1 MEMID2 MEMID3
R3094 10K_4 R3098 10K_4 R3096 *10K_4 R3100 10K_4
NC on PARK

VCC3_M92 R3066 4.7K_4 R3065 4.7K_4
(21) E_EDIDCLK AK26 SCL
(21) E_EDIDDATA AJ26 SDA

I2C

GENERAL PURPOSE I/O
GPIO_0 T3009 GFX_GPIO0 AH20
GPIO_1 T3002 GFX_GPIO1 AH18
GPIO_2 T3008 GFX_GPIO2 AN16
GPIO_3_SMBDATA T3001 GFX_GPIO3 AH23
GPIO_4_SMBCLK GFX_GPIO4 AJ23
GPIO_5_AC_BATT AH17
GPIO_6 AJ17
GPIO_7_BLON (21,28) EXT_LVDS_BLON AK17
GPIO_8_ROMSO AJ13
GPIO_9_ROMSI GPIO9 AH15
GPIO_10_ROMSCK AJ16
GPIO_11 GPIO11 AK16
GPIO_12 GPIO12 AL16
GPIO_13 GPIO13 AM16
GPIO_14_HPD2 AM14
GPIO_15_PWRCNTL_0 (35) V_PWRCNTL0 AM13
GPIO_16_SSIN T3017 Madison_ALERT# AK14
GPIO_17_THERMAL_INT AG30
GPIO_18_HPD3 AN14
GPIO_19_CTF T3006 V_PWRCNTL1 AM17
GPIO_20_PWRCNTL_1 AL13
GPIO_21_BB_EN AJ14
GPIO_22_ROMCSB (11) PCIE_REQ_GFX# AK13
GPIO_23_CLKREQB AN13
JTAG_TRSTB T3000 GPIO24_TRSTB AM23
JTAG_TDI T3011 GPIO25_TDI AN23
JTAG_TCK T3003 GPIO26_TCK AK23
JTAG_TMS T3007 GPIO27_TMS AL24
JTAG_TDO T3013 GPIO28_TDO AM24
GENERICA AJ19
GENERICB AK19
GENERICC AJ20
GENERICD AK20
GENERICE_HPD4 AJ24
GENERICF AJ26
GENERICG AH26
HPD1 (22) EXT_HDMI_HPD AK24

VREFG VCC1.8 R3023 499/F_4 R3024 249/F_4 C3043 0.1u/10V_4 AH13
(1.8V@75mA DPLL_PVDD) VCC1.8 C3137 1u/6.3V_4 C3139 0.1u/10V_4
3A change L3006 to short pad
DPLL_PVDD AM32
DPLL_PVSS AN32
3A delete L3007 0ohm (1.0V@125mA DPLL_VDDC) VCC1.0 C3140 0.1u/10V_4
(M9x : VCC1.1 for DPLL_VDDC)
DPLL_VDDC AN31
XTALIN AV33 XTALOUT AU34
XO_IN AW34
XO_IN2 AW35
C3230 27P/50V_4 XTALIN Y3000 27MHZ R3029 1M_4 XTALOUT C3229 27P/50V_4
3A delete L3013 0ohm
(1.8V@20mA TSVDD) VCC1.8 C3199 1u/6.3V_4 C3198 0.1u/10V_4
T_DPLUS AF29
T_DMINUS AG29
DPLUS DMINUS THERMAL
TS_FDO AK32
TS_A AL31
TSVDD AJ32
TSVSS AJ33

PLL/CLOCK
THERMAL

DPA
TXCAP_DPA3P AU24 EXT_HDMI_TXCP (22)
TXCAM_DPA3N AV23 EXT_HDMI_TXCN (22)
TX0P_DPA2P AT25 EXT_HDMI_TXDP0 (22)
TX0M_DPA2N AR24 EXT_HDMI_TXDN0 (22)
TX1P_DPA1P AU26 EXT_HDMI_TXDP1 (22)
TX1M_DPA1N AV25 EXT_HDMI_TXDN1 (22)
TX2P_DPA0P AT27 EXT_HDMI_TXDP2 (22)
TX2M_DPA0N AR26 EXT_HDMI_TXDN2 (22)
DPB
TXCBP_DPB3P AR30
TXCBM_DPB3N AT29
TX3P_DPB2P AV31
TX3M_DPB2N AU30
TX4P_DPB1P AR32
TX4M_DPB1N AT31
TX5P_DPB0P AT33
TX5M_DPB0N AU32
DPC
TXCCP_DPC3P AU14
TXCCM_DPC3N AV13
TX0P_DPC2P AT15
TX0M_DPC2N AR14
TX1P_DPC1P AU16
TX1M_DPC1N AV15
TX2P_DPC0P AT17
TX2M_DPC0N AR16
DPD
TXCDP_DPD3P AU20
TXCDM_DPD3N AT19
TX3P_DPD2P AT21
TX3M_DPD2N AR20
TX4P_DPD1P AU22
TX4M_DPD1N AV21
TX5P_DPD0P AT23
TX5M_DPD0N AR22

DAC1
R AD39 RB AD37 CRT_R (21)
G AE36 GB AD35 CRT_G (21)
B AF37 BB AE38 CRT_B (21)
HSYNC AC36 CRT_HSYNC (21)
VSYNC AC38 CRT_VSYNC (21)
VCC3_M92 R3054 4.7K_4 R3053 4.7K_4
RSET AB34 R3055 499/F_4 C3203 0.1u/10V_4 C3205 1u/6.3V_4 VCC1.8
AVDD AD34 AVSSQ AE34
VDD1DI AC33 VSS1DI AC34 C3174 0.1u/10V_4 C3193 1u/6.3V_4 VCC1.8
3A delete L3012, R3061 0ohm
(1.8V@45mA VDD1DI)

DAC2
R2 AC30 R2B AC31
G2 AD30 G2B AD31
B2 AF30 B2B AF31
C AC32 Y AD32 COMP AF32
H2SYNC AD29 V2SYNC AC29
3A delete R3049 0ohm
VDD2DI AG31 VSS2DI AG32 VCC1.8
A2VDD AG33 VCC3_M92 C3204 0.1u/10V_4
A2VDDQ AD33 VCC1.8 C3149 0.1u/10V_4 C3168 1u/6.3V_4
A2VSSQ AF33
R2SET AA29 R3048 715/F_4
3A change L3010 to short pad

DDC/AUX
DDC1CLK AM26 EXT_HDMI_SCL (22)
DDC1DATA AN26 EXT_HDMI_SDA (22)
AUX1P AM27
AUX1N AL27
DDC2CLK AM19
DDC2DATA AL19
AUX2P AN20
AUX2N AM20
DDCCLK_AUX3P AL30
DDCDATA_AUX3N AM30
DDCCLK_AUX4P AL29
DDCDATA_AUX4N AM29
DDCCLK_AUX5P AN21
DDCDATA_AUX5N AM21
DDC6CLK AJ30 CRT_SCL (21)
DDC6DATA AJ31 CRT_SDA (21)
DDCCLK_AUX7P AK30
DDCDATA_AUX7N AK29

Madison M2

Madison Thermal Sensor
VCC3 C3209 0.1u/10V_4
(3) SMB_CLK SMBCLK T_DPLUS
(3) SMB_DAT SMDATA C3206 2200P_4
Madison_ALERT# ALERT T_DMINUS
VCC3 R3064 10K_4 T_CRIT_A GND
VCC3 R3062 10K_4
U3004 G781-1

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Quanta Computer Inc.
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M@ for Madison level

layout issue
remove R387

(For Park&DDR3, VDDR = 1.5V@2.0A)

U3006E

MEM I/O

VDDR1#1 VDDR1#2 VDDR1#3 VDDR1#4 VDDR1#5 VDDR1#6 VDDR1#7 VDDR1#8 VDDR1#9 VDDR1#10 VDDR1#11 VDDR1#12 VDDR1#13 VDDR1#14 VDDR1#15 VDDR1#16 VDDR1#17 VDDR1#18 VDDR1#19 VDDR1#20 VDDR1#21 VDDR1#22 VDDR1#23 VDDR1#24 VDDR1#25 VDDR1#26 VDDR1#27 VDDR1#28 VDDR1#29 VDDR1#30 VDDR1#31 VDDR1#32 VDDR1#33 VDDR1#34

VCC1.8

C3000 4.7U/6.3V_6 C3004 4.7U/6.3V_6 C3001 4.7U/6.3V_6 C3002 M@4.7u/6.3V_6 C3003 M@4.7u/6.3V_6 C126 330U/6.3V_7343/H1.9

C3055 1u/6.3V_4 C3073 1u/6.3V_4 C3051 1u/6.3V_4 C3125 1u/6.3V_4 C3049 1u/6.3V_4

C3094 M@1u/6.3V_4 C3097 M@1u/6.3V_4 C3117 M@1u/6.3V_4 C3113 M@1u/6.3V_4 C3050 M@1u/6.3V_4

C3052 0.1u/10V_4 C3079 0.1u/10V_4 C3054 0.1u/10V_4 C3059 0.1u/10V_4 C3093 0.1u/10V_4

3A : change L3004, L3019 to short pad

(1.8V@110mA VDD_CT)

VCC1.8

C3072 M@4.7u/6.3V_6 C3091 1u/6.3V_4 C3074 1u/6.3V_4 C3092 0.1u/10V_4

VCC3_M92

C3213 M@4.7u/6.3V_6 C3118 1u/6.3V_4 C3211 1u/6.3V_4 C3111 0.1u/10V_4

VCC1.8

C3274 1u/6.3V_4 C3273 0.1u/10V_4

LEVEL TRANSLATION

VDD_CT#1 VDD_CT#2 VDD_CT#3 VDD_CT#4

I/O

VDDR3#1 VDDR3#2 VDDR3#3 VDDR3#4

VDDR4#4 VDDR4#5 VDDR4#7 VDDR4#8

VDDR4#1 VDDR4#2 VDDR4#3 VDDR4#6

	M92	Manthattan
VDDRHA	X	X
VSSRHA	X	X
VDDRHB	O	X
VSSRHB	O	X

NC_VDDRHA NC_VSSRHA

VCC1.5

NC_VDDRHB NC_VSSRHB

PLL

PCIE_PVDD

(1.8V@40mA PCIE_PVDD)

VCC1.8

C3219 1u/6.3V_4 C3224 1u/6.3V_4 C3217 0.1u/10V_4

MPV18#1 MPV18#2

M9x : MPV18、SPV18 -> NC

SPV18 SPV10 SPVSS

(For M9x : VGA_CORE for SPV10)

VGA_Core

C3029 1u/6.3V_4 C3030 1u/6.3V_4 C3031 0.1u/10V_4

(1.0V@120mA SPV10)

VOLTAGE SENESE

T3014 VCORE_SEN FB_VDDC

T3016 VDDCI_SEN FB_VDDCI

M9x : R3084 Mount

VCORE_SEN/RTN and VDDCI_SEN/RTN route as differetial pair

FB_GND

Madison M2

PCIE

PCIE_VDDR#1 PCIE_VDDR#2 PCIE_VDDR#3 PCIE_VDDR#4 PCIE_VDDR#5 PCIE_VDDR#6 PCIE_VDDR#7 PCIE_VDDR#8

VCC1.8

C3191 0.1u/10V_4 C3192 0.1u/10V_4 C3172 1u/6.3V_4 C3171 1u/6.3V_4 C3195 M@1u/6.3V_4 C3197 4.7U/6.3V_6

(1.8V@504mA PCIE_VDDR)

PCIE_VDDC#1 PCIE_VDDC#2 PCIE_VDDC#3 PCIE_VDDC#4 PCIE_VDDC#5 PCIE_VDDC#6 PCIE_VDDC#7 PCIE_VDDC#8 PCIE_VDDC#9 PCIE_VDDC#10 PCIE_VDDC#11 PCIE_VDDC#12

(1.0V@2A PCIE_VDDC)

VCC1.0

C3132 1u/6.3V_4 C3134 1u/6.3V_4 C3133 1u/6.3V_4 C3136 1u/6.3V_4 C3194 4.7U/6.3V_6

C3128 1u/6.3V_4 C3131 1u/6.3V_4 C3138

(M9x : 1.1V@2A PCIE_VDDC)

CORE

VDDC#1 VDDC#2 VDDC#3 VDDC#4 VDDC#5 VDDC#6 VDDC#7 VDDC#8 VDDC#9 VDDC#10 VDDC#11 VDDC#12 VDDC#13 VDDC#14 VDDC#15 VDDC#16 VDDC#17 VDDC#18 VDDC#19 VDDC#20 VDDC#21 VDDC#22 VDDC#23 VDDC#24 VDDC#25 VDDC#26 VDDC#27 VDDC#28 VDDC#29 VDDC#30 VDDC#31 VDDC#32 VDDC/BIF_VDDC#33 VDDC#34 VDDC#35 VDDC#36 VDDC#37 VDDC#38 VDDC#39 VDDC#40 VDDC#41 VDDC/BIF_VDDC#42 VDDC#43 VDDC#44 VDDC#45 VDDC#46 VDDC#47 VDDC#48 VDDC#49 VDDC#50 VDDC#51 VDDC#52 VDDC#53 VDDC#54 VDDC#55 VDDC#56 VDDC#57 VDDC#58

POWER

(0.95V-1.1V@11 A (RMS) / 16 A (Peak) VDDC)

VGA_CORE

C3120 10U/6.3V_8 C3121 10U/6.3V_8 C3096 10U/6.3V_8 C3119 M@10U/6.3V_8 C3060 M@10U/6.3V_8

C3130 4.7U/6.3V_6 C3078 4.7U/6.3V_6 C3077 4.7U/6.3V_6 C3123 *4.7u/6.3V_6 C3115 4.7U/6.3V_6

C3084 1u/6.3V_4 C3081 1u/6.3V_4 C3101 1u/6.3V_4 C3086 1u/6.3V_4 C3085 1u/6.3V_4

C3102 1u/6.3V_4 C3105 1u/6.3V_4 C3088 1u/6.3V_4 C3106 1u/6.3V_4 C3082 1u/6.3V_4

C3100 1u/6.3V_4 C3083 1u/6.3V_4 C3108 1u/6.3V_4 C3089 1u/6.3V_4 C3080 1u/6.3V_4

C3109 M@1u/6.3V_4 C3107 M@1u/6.3V_4 C3087 M@1u/6.3V_4 C3103 M@1u/6.3V_4 C3104 M@1u/6.3V_4

C2297 220UF_ESR15

3A : delete R3050 0ohm

ISOLATED CORE I/O

VDDCI#1 VDDCI#2 VDDCI#3 VDDCI#4 VDDCI#5 VDDCI#6 VDDCI#7 VDDCI#8 VDDCI#9 VDDCI#10 VDDCI#11 VDDCI#12 VDDCI#13 VDDCI#14 VDDCI#15 VDDCI#16 VDDCI#17 VDDCI#18 VDDCI#19 VDDCI#20 VDDCI#21 VDDCI#22

VGA_Core

C3061 4.7U/6.3V_6 C3062 4.7U/6.3V_6 C3129 10U/6.3V_8

(0.95V-1.1V@2A-VDDCI)
(0.95V-1.1V@2A Madison)

C3065 1u/6.3V_4 C3069 1u/6.3V_4 C3068 1u/6.3V_4 C3067 1u/6.3V_4 C3110 1u/6.3V_4

C3064 M@1u/6.3V_4 C3070 M@1u/6.3V_4 C3066 M@1u/6.3V_4

U3006E

PCIE_VSS#1 PCIE_VSS#2 PCIE_VSS#3 PCIE_VSS#4 PCIE_VSS#5 PCIE_VSS#6 PCIE_VSS#7 PCIE_VSS#8 PCIE_VSS#9 PCIE_VSS#10 PCIE_VSS#11 PCIE_VSS#12 PCIE_VSS#13 PCIE_VSS#14 PCIE_VSS#15 PCIE_VSS#16 PCIE_VSS#17 PCIE_VSS#18 PCIE_VSS#19 PCIE_VSS#20 PCIE_VSS#21 PCIE_VSS#22 PCIE_VSS#23 PCIE_VSS#24 PCIE_VSS#25 PCIE_VSS#26 PCIE_VSS#27 PCIE_VSS#28 PCIE_VSS#29 PCIE_VSS#30 PCIE_VSS#31 PCIE_VSS#32 PCIE_VSS#33 PCIE_VSS#34 PCIE_VSS#35

GND

GND#1 GND#2 GND#3 GND#4 GND#5 GND#6 GND#7 GND#8 GND#9 GND#10 GND#11 GND#12 GND#13 GND#14 GND#15 GND#16 GND#17 GND#18 GND#19 GND#20 GND#21 GND#22 GND#23 GND#24 GND#25 GND#26 GND#27 GND#28 GND#29 GND#30 GND#31 GND#32 GND#33 GND#34 GND#35 GND#36 GND#37 GND#38 GND#39 GND#40 GND#41 GND#42 GND#43 GND#44 GND#45 GND#46 GND#47 GND#48 GND#49 GND#50 GND#51 GND#52 GND#53 GND#54 GND#55 GND#56 GND#57 GND#58 GND#59 GND#60 GND/PX_EN#61 GND#62 GND#63 GND#64 GND#65 GND#66 GND#67 GND#68 GND#69 GND#70 GND#71 GND#72 GND#73 GND#74 GND#75 GND#76 GND#77 GND#78 GND#79 GND#80 GND#81 GND#82 GND#83 GND#84 GND#85 GND#86 GND#87 GND#88 GND#89 GND#90 GND#91 GND#92 GND#93 GND#94 GND#95 GND#96 GND#97 GND#98

GND#100 GND#101 GND#102 GND#103 GND#104 GND#105 GND#106 GND#107 GND#108 GND#109 GND#110 GND#111 GND#112 GND#113 GND#114 GND#115 GND#116 GND#117 GND#118 GND#119 GND#120 GND#121 GND#122 GND#123 GND#124 GND#125 GND#126 GND#127 GND#128 GND#129 GND#130 GND#131 GND#132 GND#133 GND#134 GND#135 GND#136 GND#137 GND#138 GND#139 GND#140 GND#141 GND#142 GND#143 GND#144 GND#145 GND#146 GND#147 GND#148 GND#149 GND#150 GND#151 GND#153 GND#154 GND#155 GND#156 GND#157 GND#158 GND#159 GND#160 GND#161 GND#163 GND#164 GND#165 GND#166 GND#167 GND#168 GND#169 GND#170 GND#171 GND#172 GND#173 GND#174 GND#175 GND#152 GND#162

VSS_MECH#1 VSS_MECH#2 VSS_MECH#3

Madison M2

R377 *0_4

2C:AMD suggestion

1.Level 1 Environment-related Substances Should NEVER be Used.
2.Purchase ink, paint, wire rods, and Molding resins only from the business Partners that Sony approves as Green Partners.

Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	ATI POWER/GND	3A

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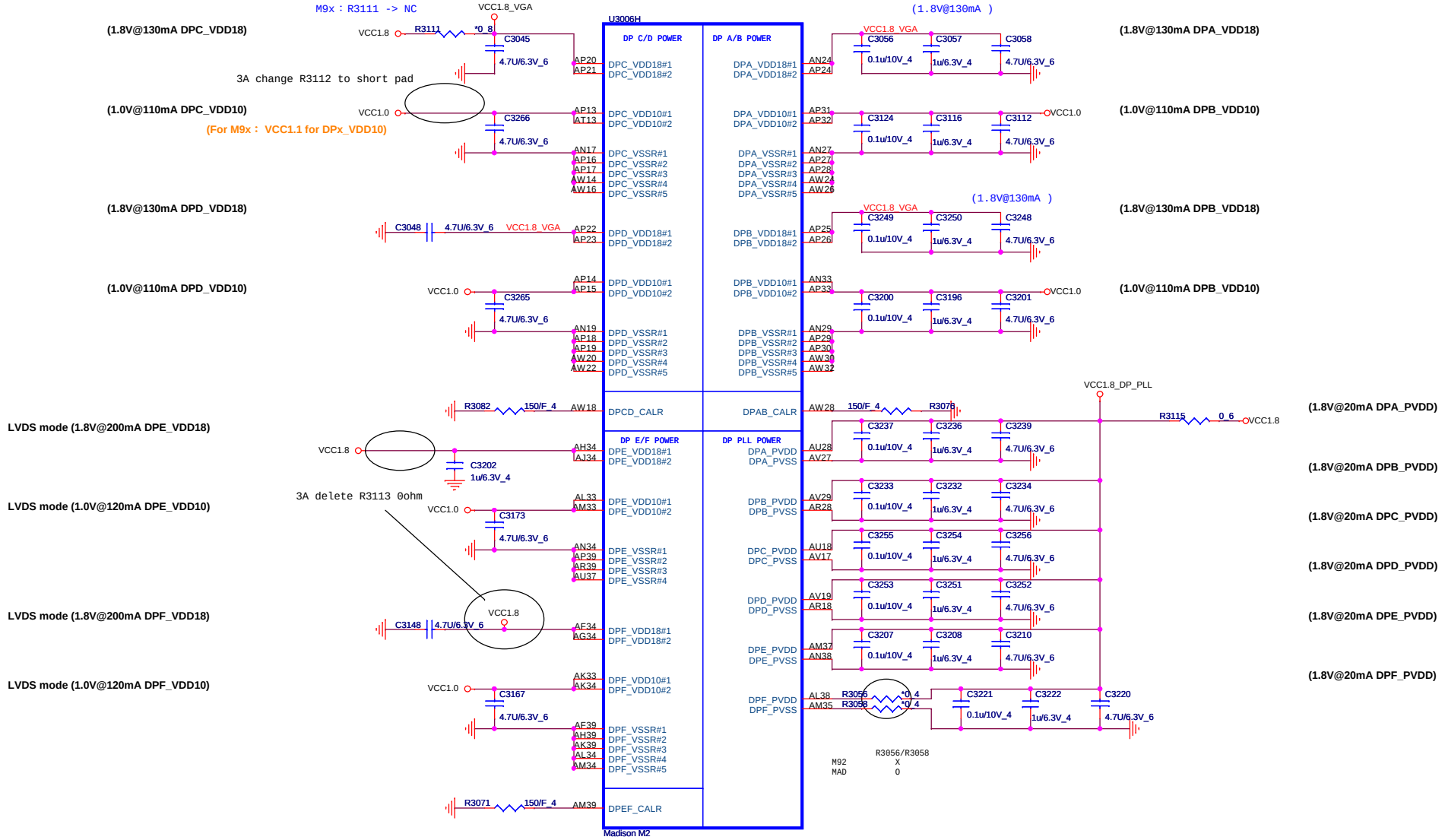

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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	ATI MEM/IF/DP	3A
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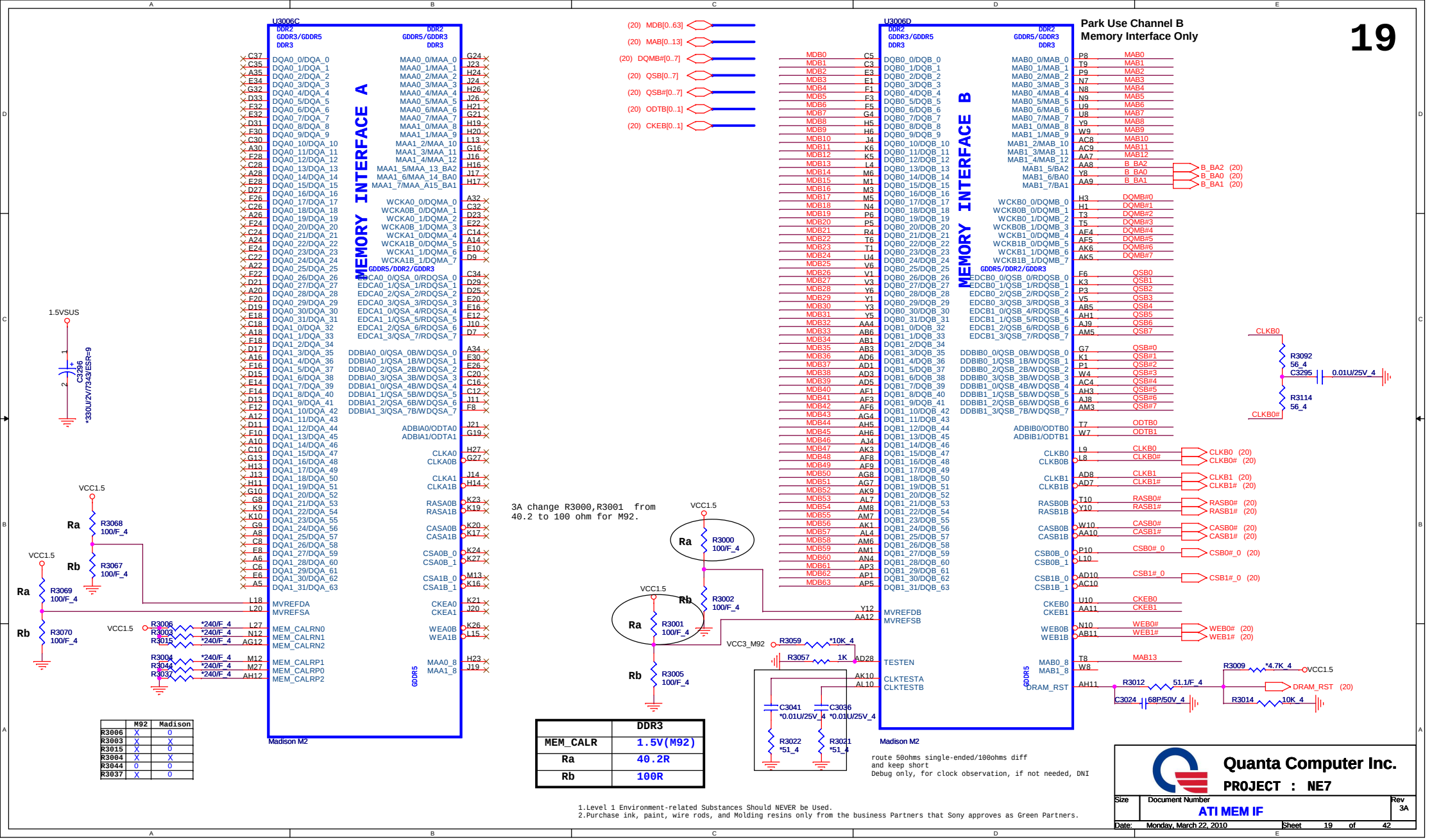
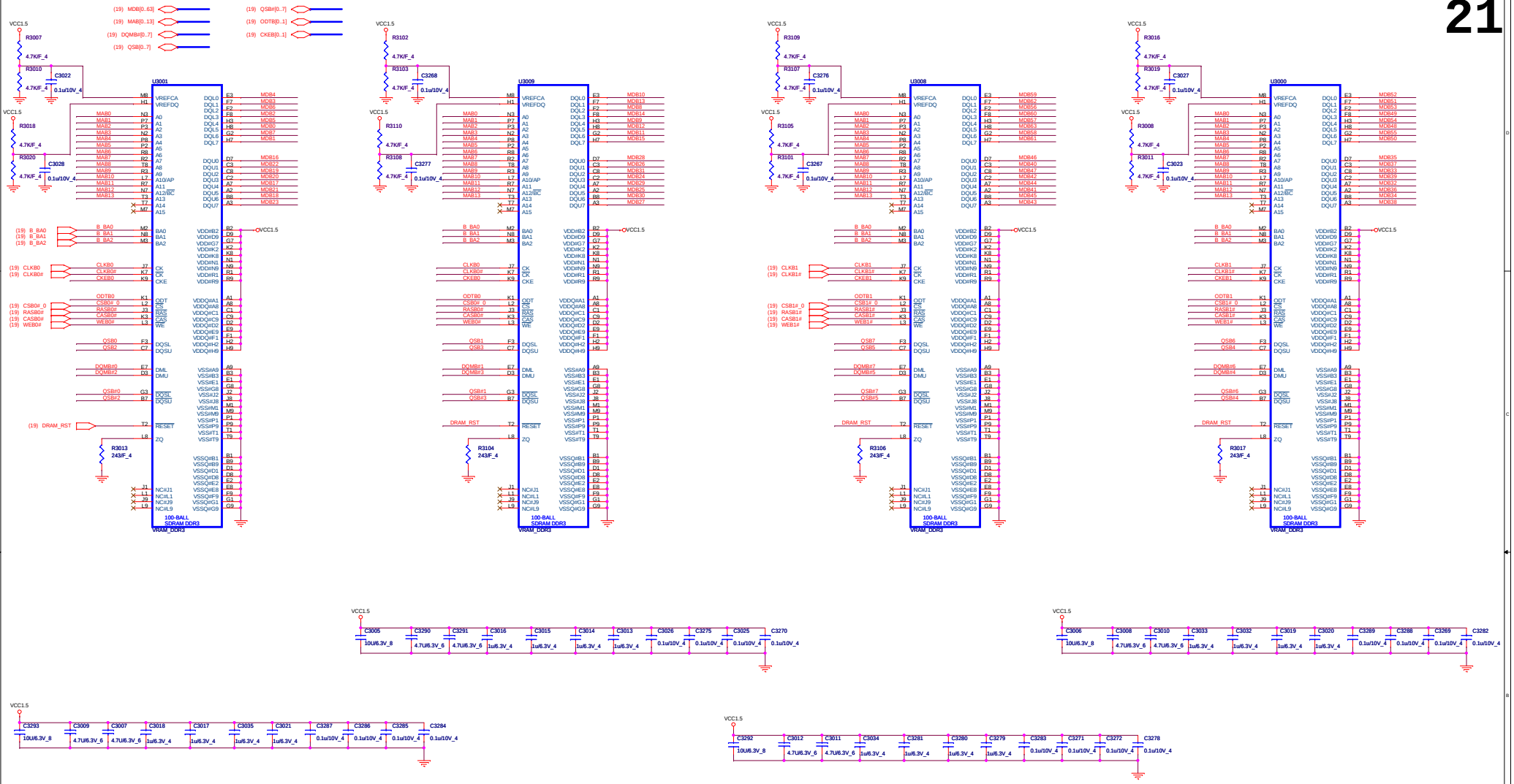
Use this option ONLY
for Park-S3



	M92	Madison
R3006	X	0
R3003	X	X
R3015	X	0
R3004	X	X
R3044	0	0
R3037	X	0

	DDR3
MEM_CALR	1.5V(M92)
Ra	40.2R
Rb	100R



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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	ATI VRAM DDR3	3A
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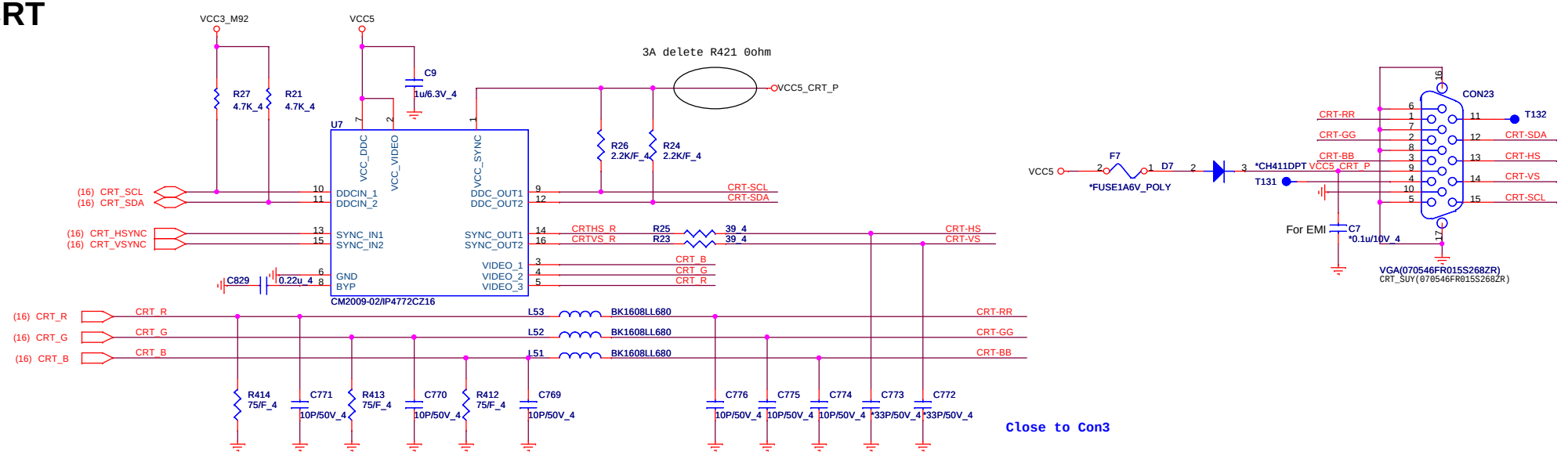
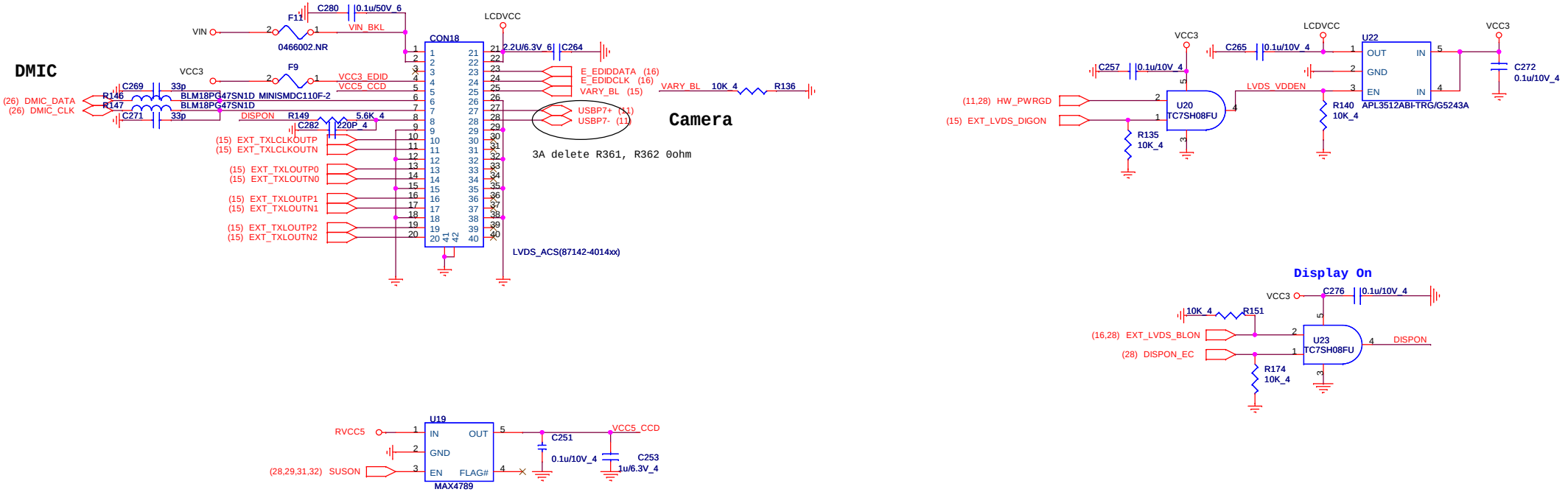
CRT



Close to Con3

LVDS



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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	CRT/LVDS	3A
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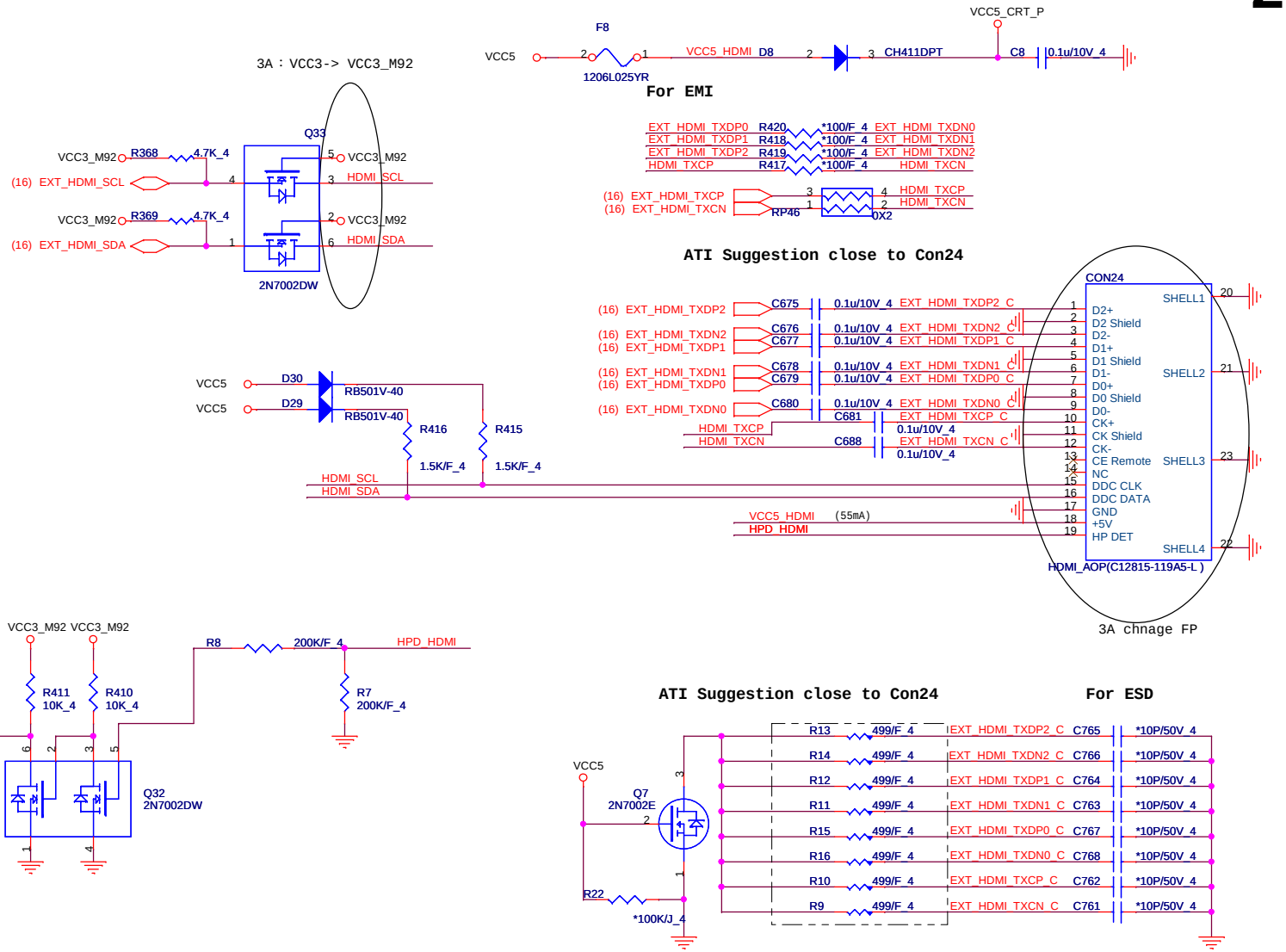

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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	HDMI	3A
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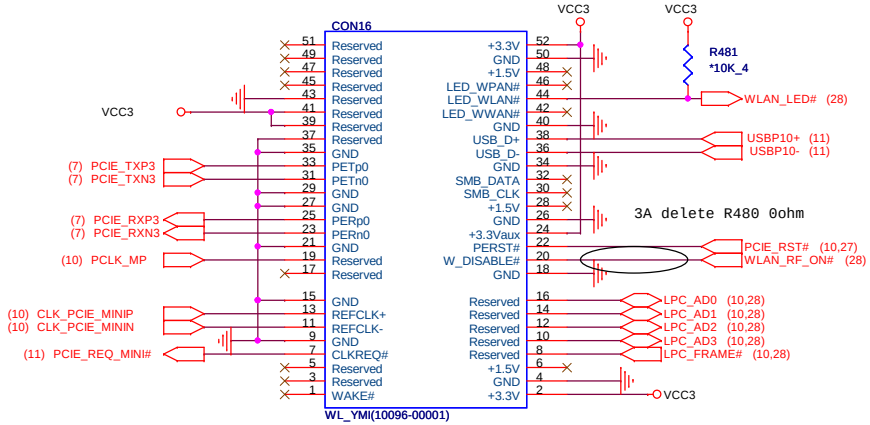
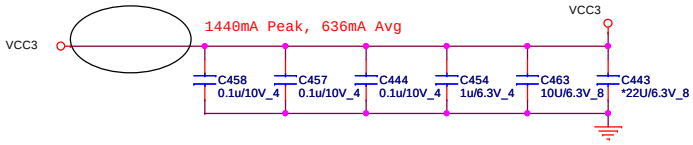


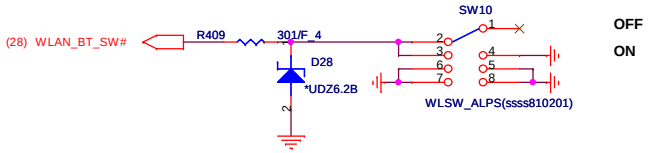
Win7 didn't support wake WLAN

3A change R252 to short pad.

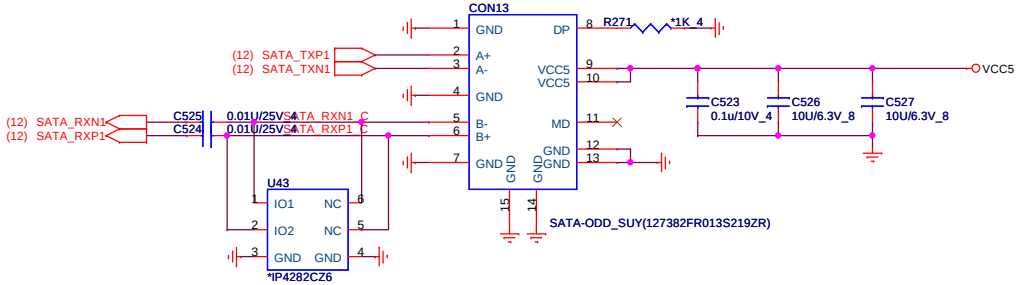
Hunson: Remove short pad: R252



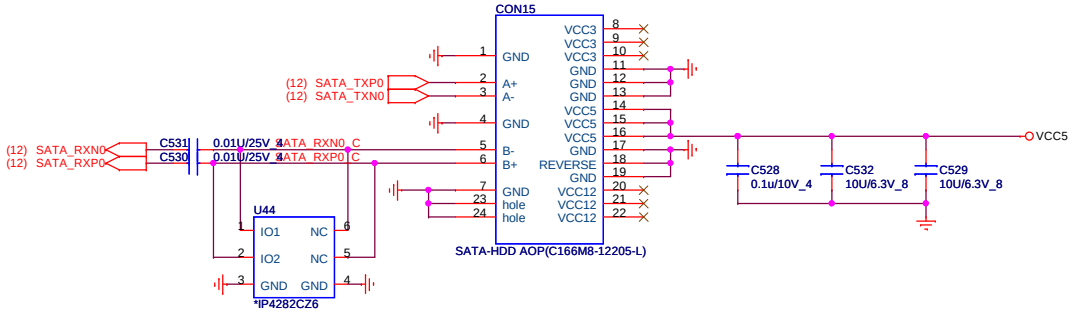
WLAN_BT_S/W



SATA ODD



2.5 inch SATA HDD



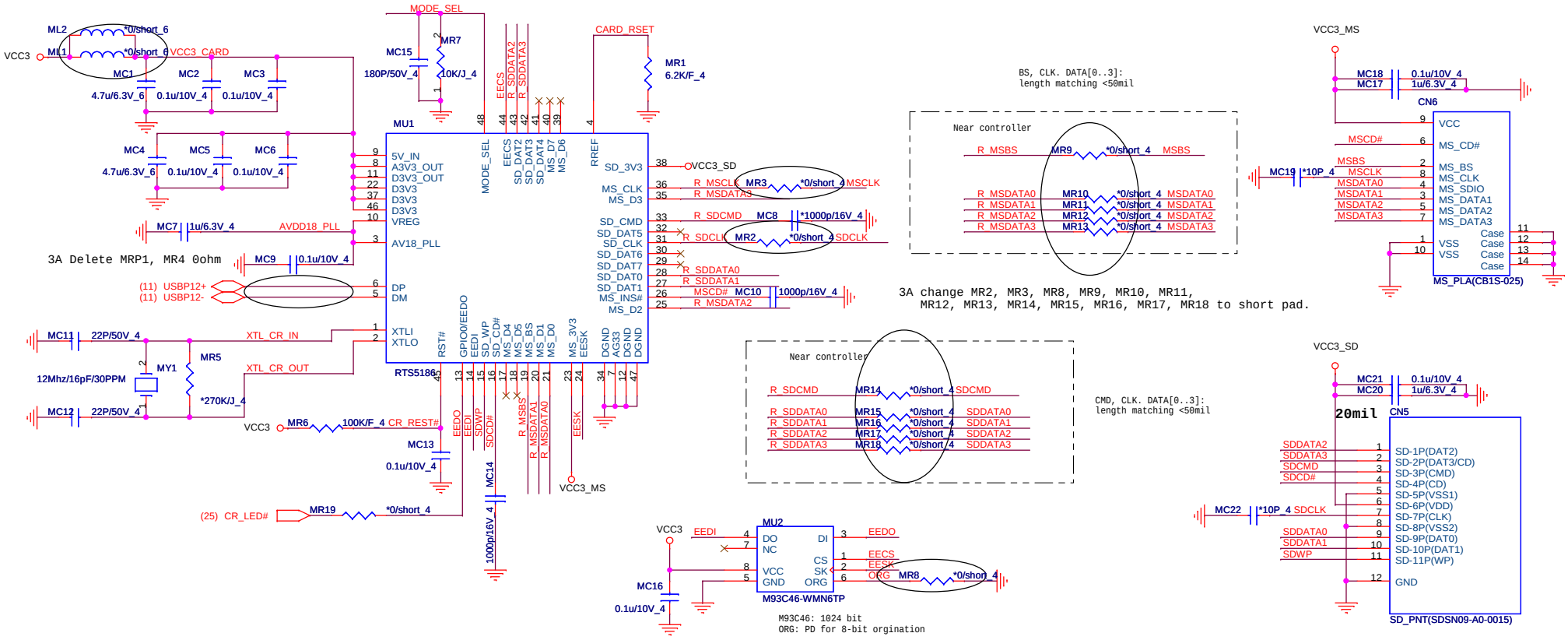
1.Level 1 Environment-related Substances Should NEVER be Used.
2.Purchase ink, paint, wire rods, and Molding resins only from the business Partners that Sony approves as Green Partners.

Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	WLAN/HDD/ODD	3A

Date: Monday, March 22, 2010 Sheet 23 of 42

3A change ML1 to short pad


3A Delete MRP1, MR4 0ohm
BS, CLK. DATA[0..3]:
length matching <50mil
Near controller
3A change MR2, MR3, MR8, MR9, MR10, MR11,
MR12, MR13, MR14, MR15, MR16, MR17, MR18 to short pad.
CMD, CLK. DATA[0..3]:
length matching <50mil
M93C46: 1024 bit
ORG: PD for 8-bit orgination
20mil

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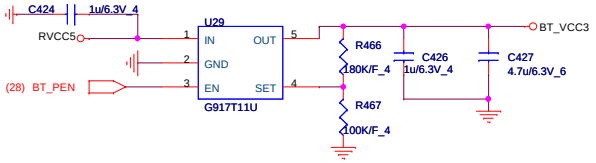
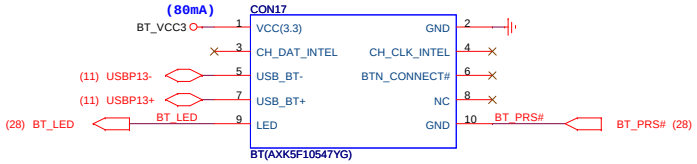
Quanta Computer Inc.
PROJECT : NE7

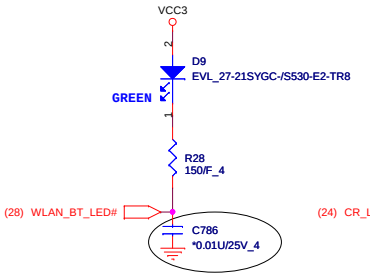
Size	Document Number	Rev
	CARD Reader	3A
Date: Monday, March 22, 2010	Sheet 24 of 42	

Bluetooth

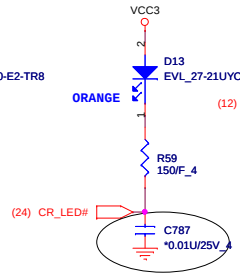




RF LED

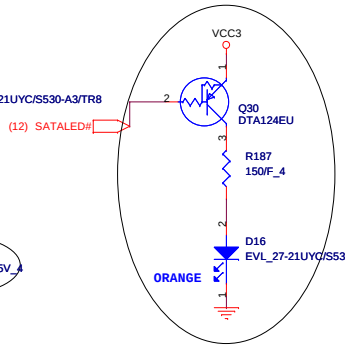


Card LED



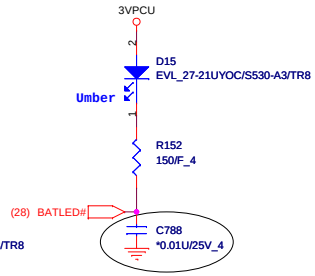
3A：Reverse C786, C787, C788 FP for ESD

HDD LED



3A：adding Q30 for ESD.

Battery LED



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Quanta Computer Inc.		
PROJECT : NE7		
Size	Document Number: Express Card/LED/TP	Rev: 3A
Date: Monday, March 22, 2010	Sheet 25 of 42	

3A delete R294 0ohm

3A delete R290, R295(colayout) 0ohm, T74(EC side)

3A Change R214 to short pad

3A R375 no mount

3A C541, C542, C543 change from AGND to GND

3A delete R299 4.7k ohm

3A adding R485 PD for mute

3A: delete R277 0ohm

3A: EMI need adding LC

DVT change to Vertical

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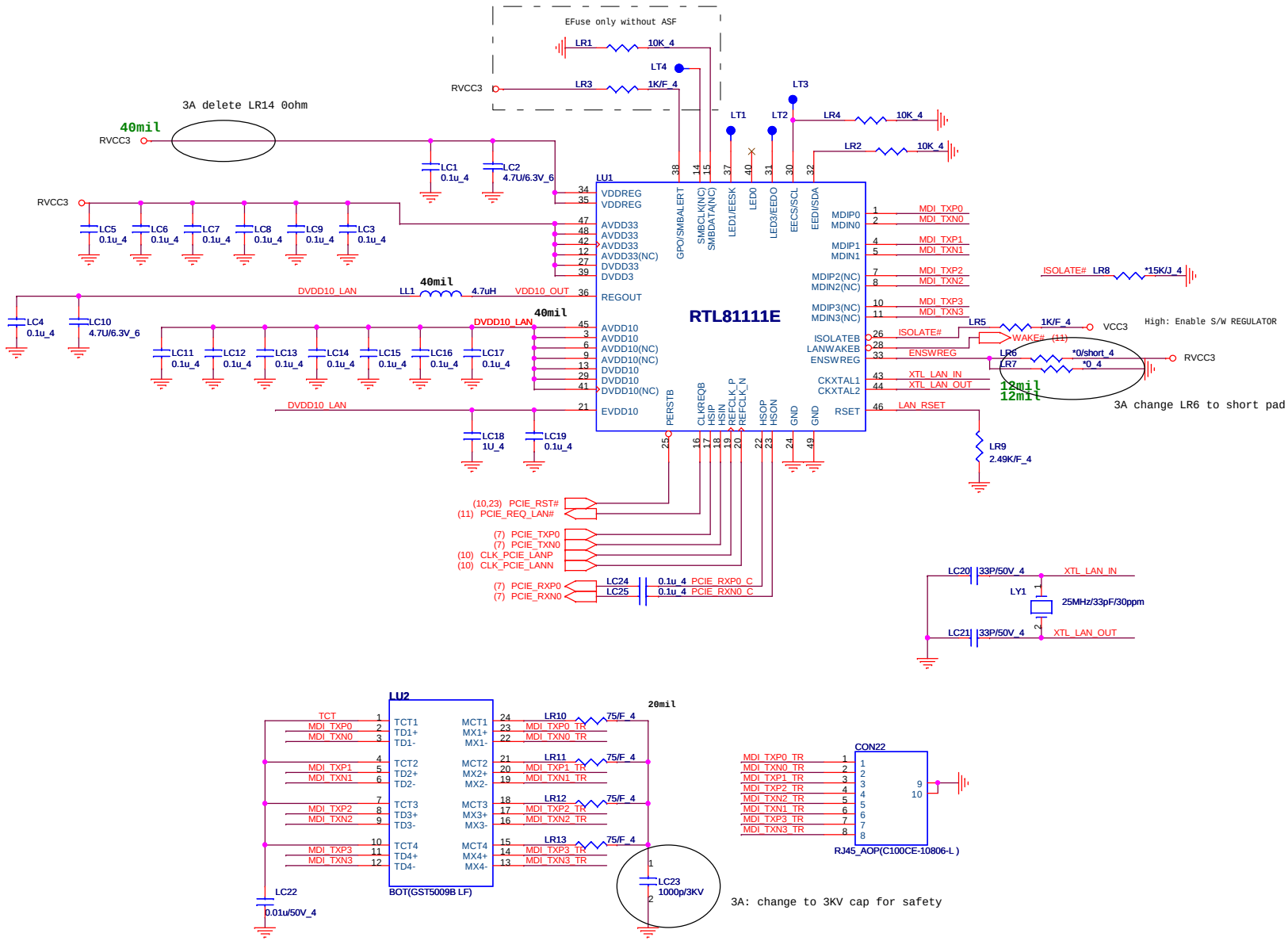
Quanta Computer Inc.		
PROJECT : NE7		
Size	Document Number	Rev
	Codec ALC269Q	3A
Date: Monday, March 22, 2010	Sheet 26 of 42	



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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	LAN RTL8111E	3A
Date: Monday, March 22, 2010	Sheet 27 of 42	

I/O Address

	BADDR1-0	Index	Data
*	1 0	2E	2F
	1 1	4E	4F
	0 0	(HCFGBAH, HCFGBAL)	(HCFGBAH, HCFGBAL)+1
	0 1	XOR-TREE TEST	

SHMB: SHBM(If = 0 Enable share host BIOS memory)

DOCK_RST# : BADDR0
T?: BADDR1

Reserved for more EC wake up function

Issue after RVCCON 20-25ms
Power step3
Power step1

3A delete 0ohm

Not connect

KBSIN[0...7] SET internal PU

3A add R489 10 k PD

3A change TP to cpu_prochot# in EC.

Power step4

Power step5

Adding for ICT

Power step2

EC must implement Wake function for ACIN & HOLD#

3A change R478 to short pad

High-active

35001 Not-I2C

EC SDI-> EEprom DO
EC SDO-> EEprom DI

NPCE781

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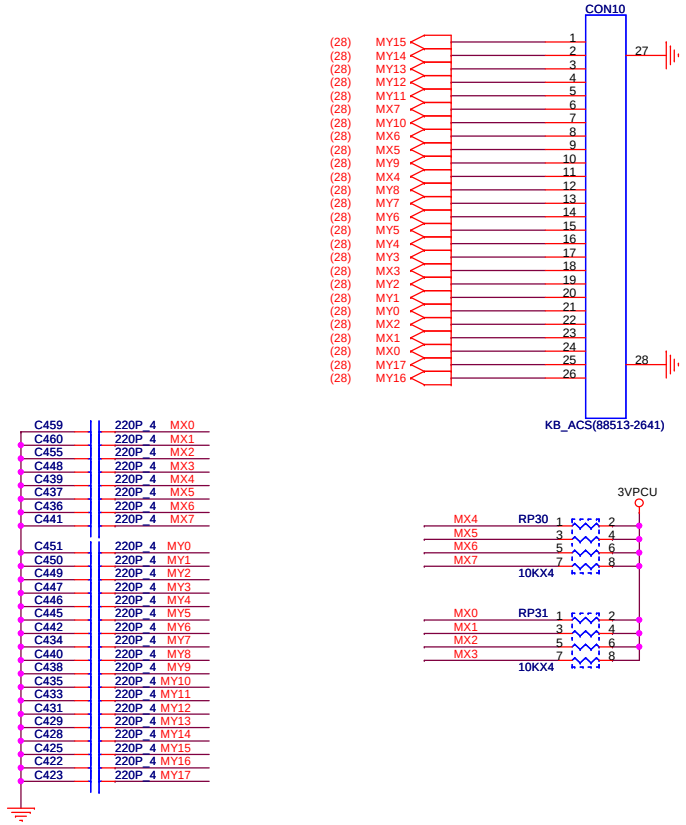
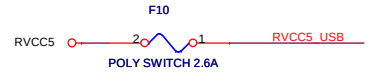
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	NPCE781 & FLASH	3A
Date: Monday, March 22, 2010	Sheet 28 of 42	

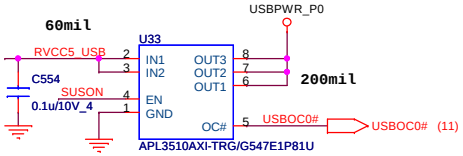
KEYBOARD

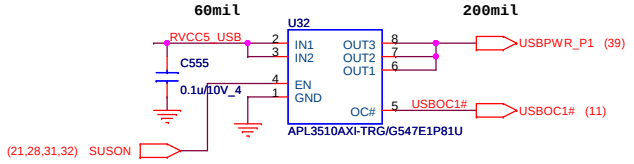


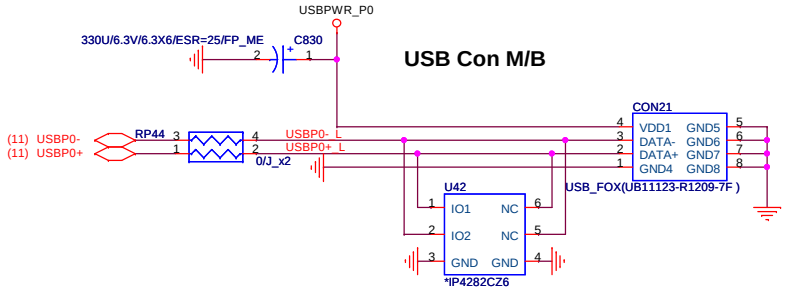
USB Port + e-SATA(USB)



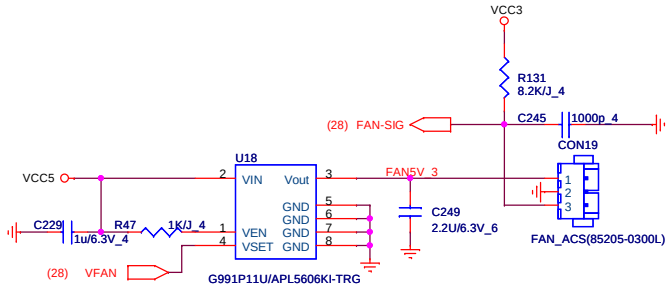
Current limit need to check







FAN



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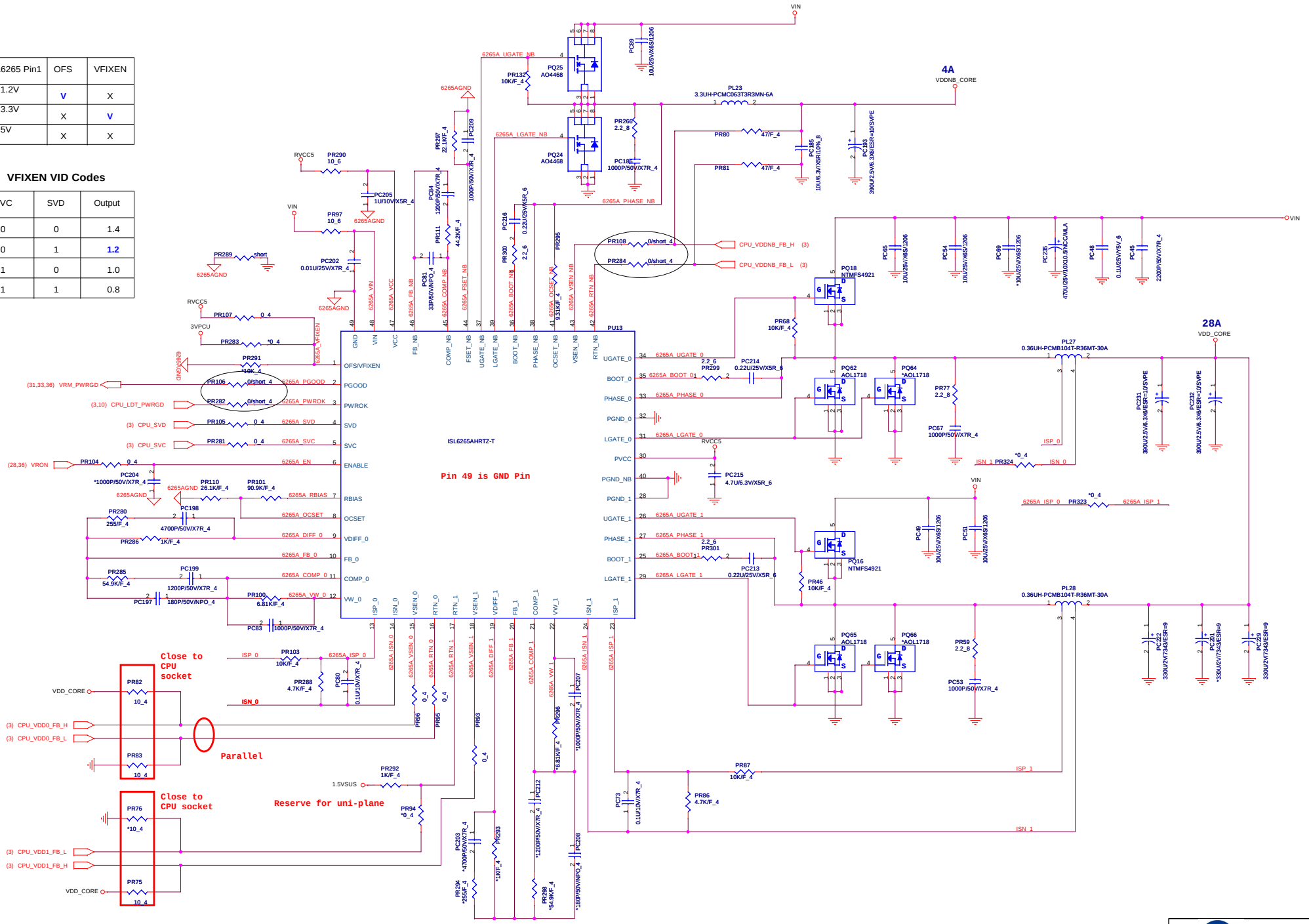
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	KB/USB/FAN/PS	3A
Date: Monday, March 22, 2010	Sheet 29 of 42	

ISL6265 Pin1	OFS	VFIXEN
1.2V	V	X
3.3V	X	V
5V	X	X

VFIXEN VID Codes

SVC	SVD	Output
0	0	1.4
0	1	1.2
1	0	1.0
1	1	0.8



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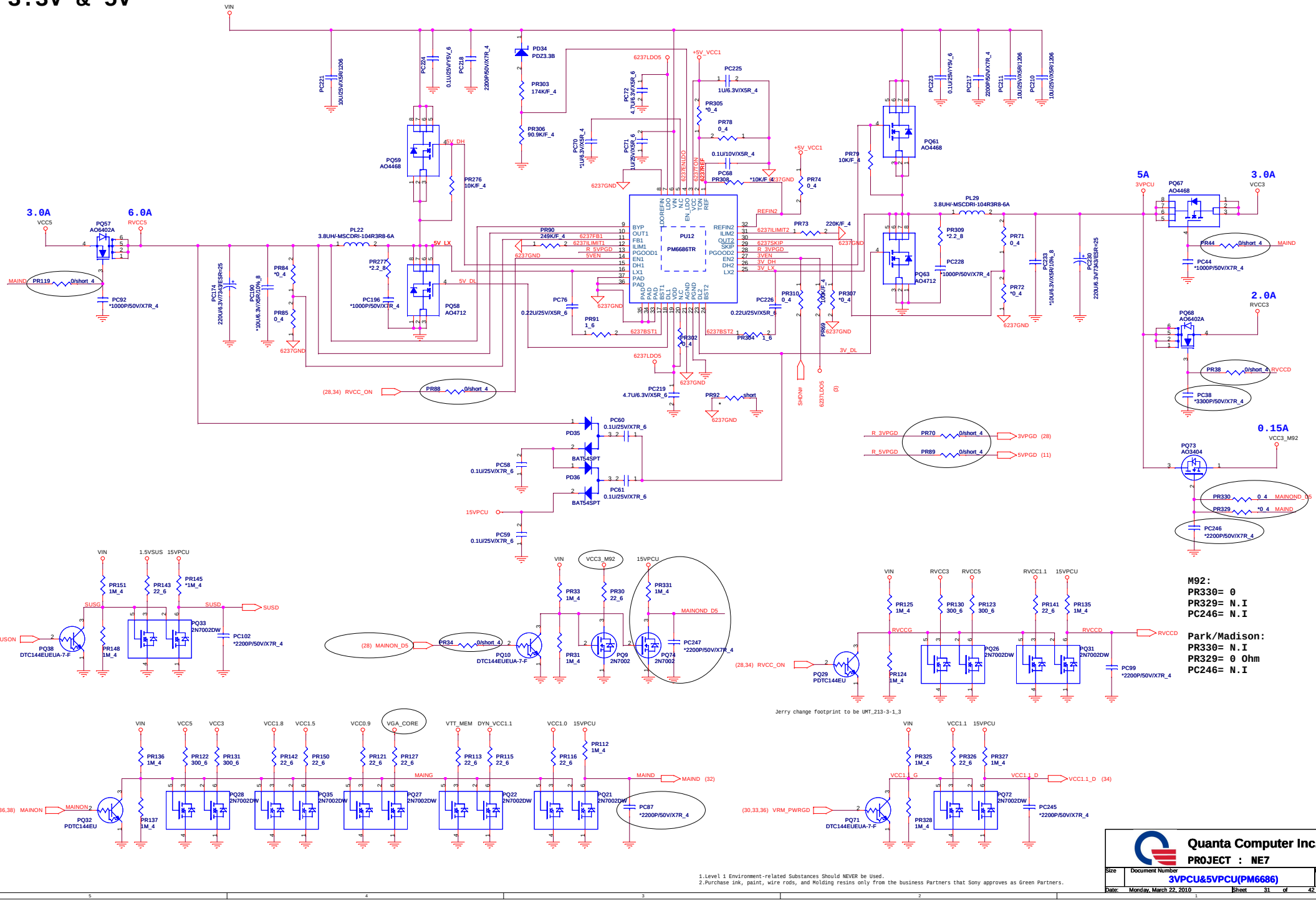
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	VCORE(ISL6265A)	3A

Date: Monday, March 22, 2010 Sheet 30 of 42

3.3V & 5V



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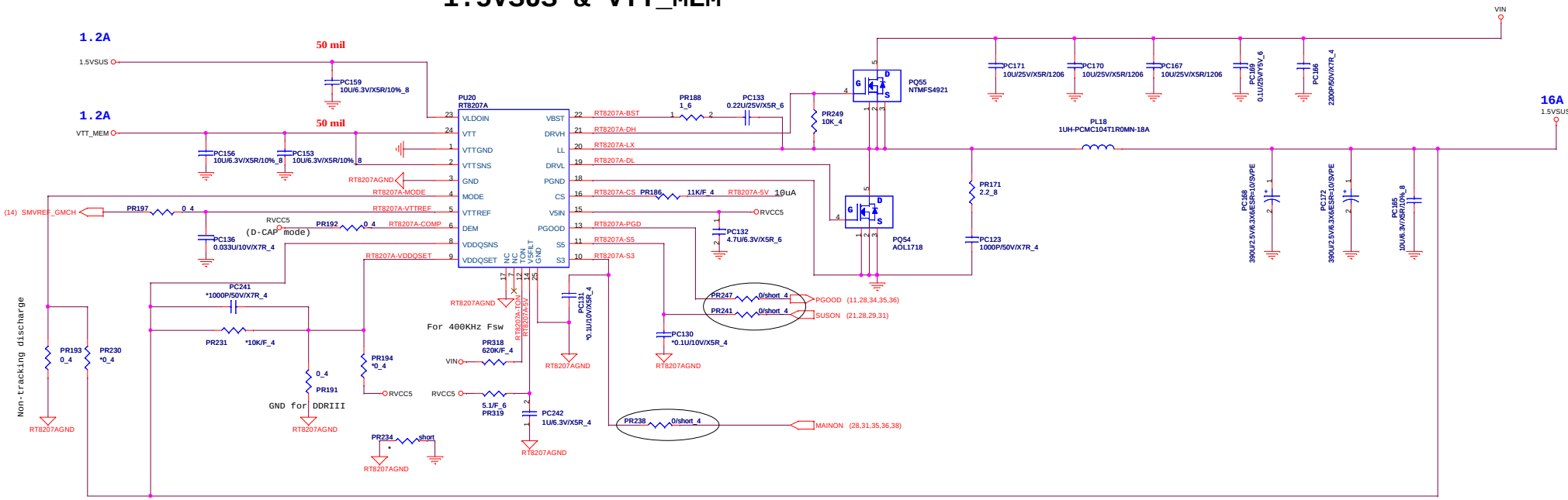
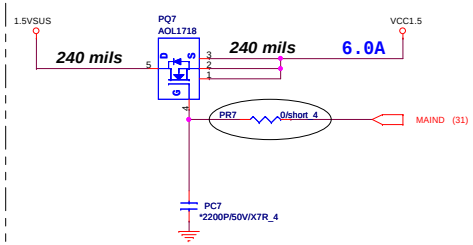
Quanta Computer Inc.		
PROJECT : NE7		
Size	Document Number	Rev
	3VPCU&5VPCU(PM6686)	3A
Date: Monday, March 22, 2010	Sheet 31 of 42	

1.5VSUS & VTT_MEM



VCC1.5



MODE	DISCHARGE MODE
+5V	No discharge
+1.8V	Tracking discharge
GND	Non-tracking discharge

VDDQSET	VDDQ(V)	VTTREF & VTT	NOTE
GND	1.5 fixed	VDDQSNS/2	DDR3
5V	1.8 fixed	VDDQSNS/2	DDR2
FB-Resistor	Adjustable	VDDQSNS/2	1.5V<VDDQ<3V

VTT = VTTREF = VDDQSNS/2 = 0.75V

STATE	S3	S5	1.5VSUS	VTTREF	VTT
S0	1	1	on	on	on
S3	0	1	on	on	off
S4/S5	0	0	off	off	off

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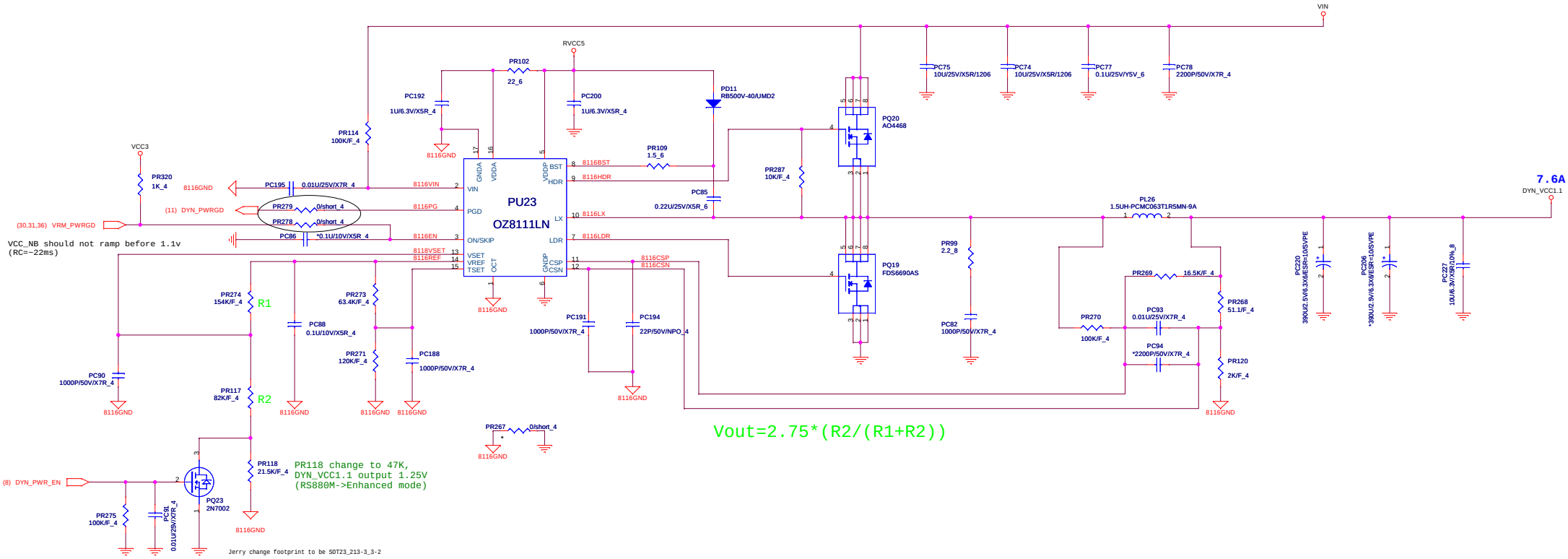
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	1.5VSUS/VTT_MEM	3A

Date: Monday, March 22, 2010 Sheet 32 of 42

DYN_VCC1.1 /7.6A



DYN_PWR_EN	High	Low
DYN_VCC1.1	0.95V	1.1V

1.Level 1 Environment-related Substances Should NEVER be Used.
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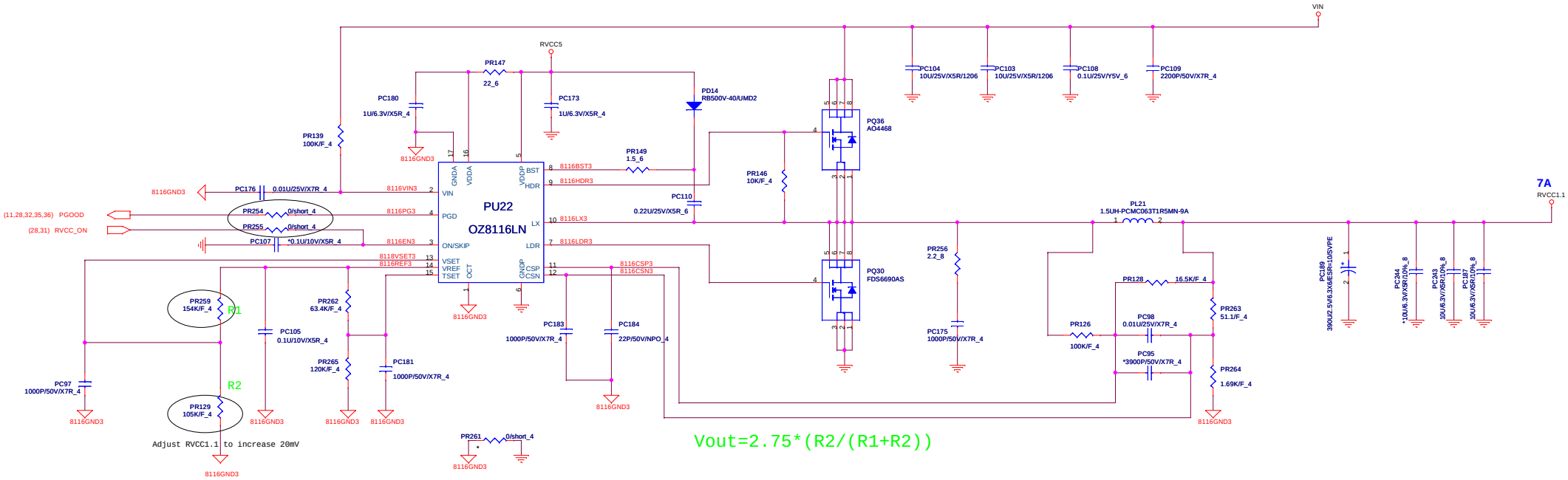
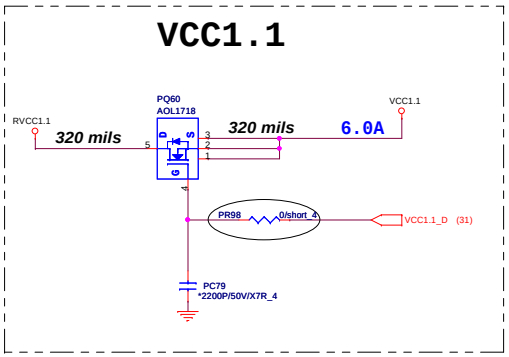
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	DYN_VCC1.1(OZ8116LN)	3A

Date: Monday, March 22, 2010 Sheet 33 of 42





1.Level 1 Environment-related Substances Should NEVER be Used.
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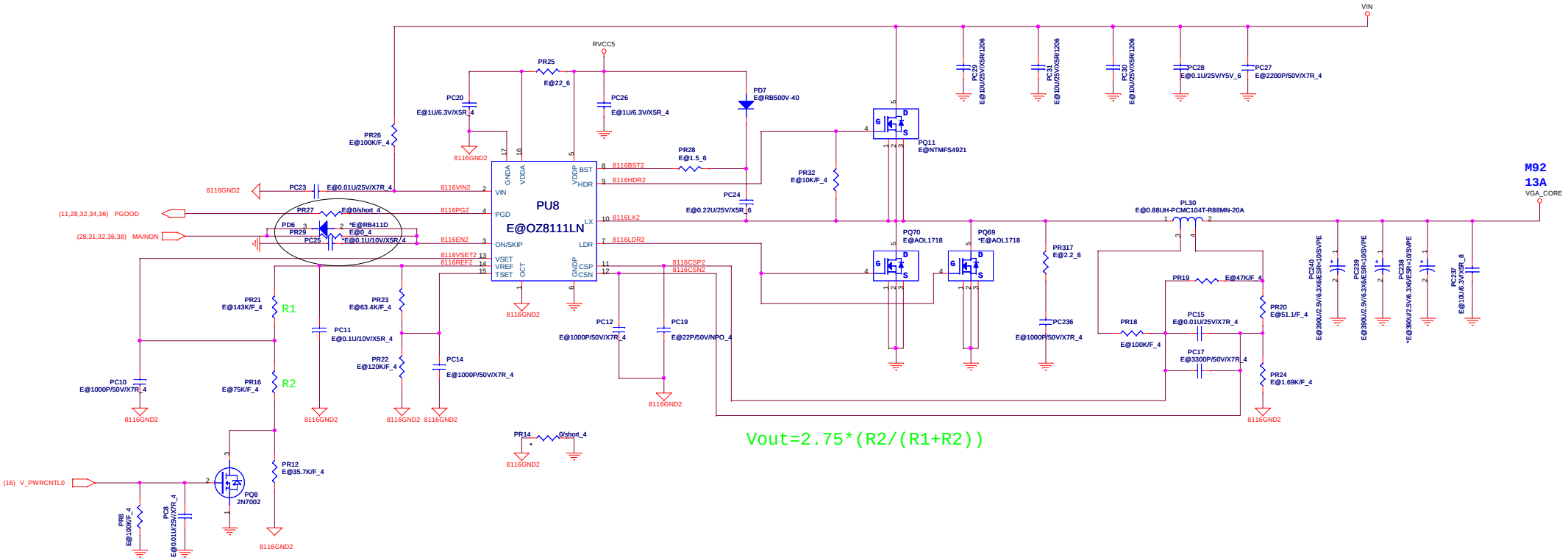
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	VCC1.1(OZ8116LN)-7A	3A

Date: Monday, March 22, 2010 Sheet 34 of 42



M92

External VGA_CORE Voltage Setting:

V_PWRCNTL0	VGA_CORE
0	1.20V
1	0.95V

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Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	VGA_CORE(OZ8116)-16A	3A

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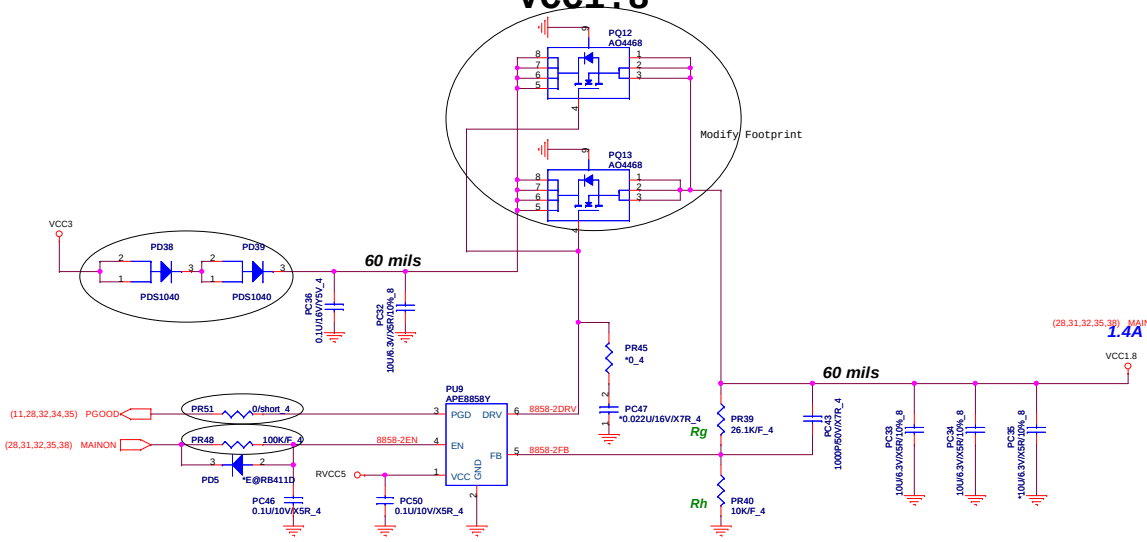
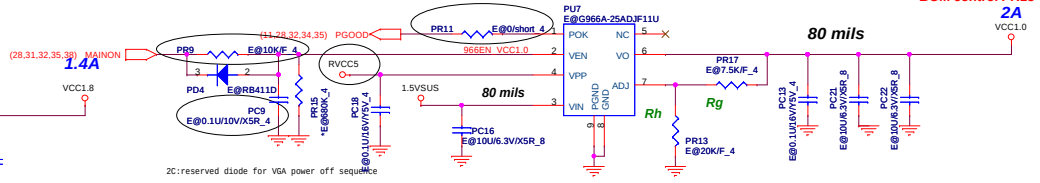
VCC1.8



Vout1 = (1+Rg/Rh)*0.5

VCC1.0

NO change Vcc1.0 NET name
M9x : Vcc1.1
Manhatten : Vcc1.0
BOM control PR13 、PR17

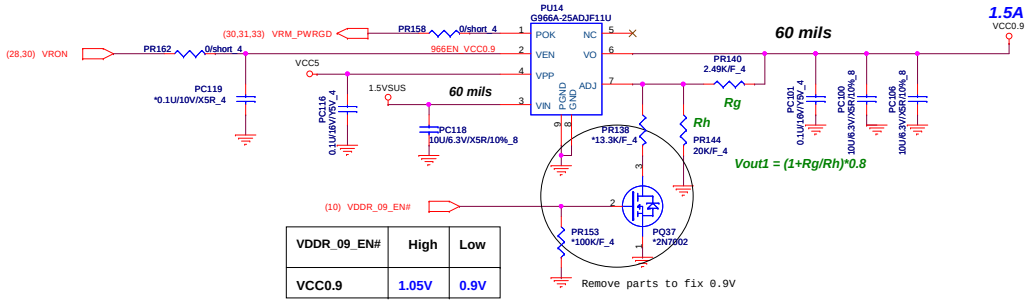


2C:reserved diode for VGA power off sequence

Vout1 = (1+Rg/Rh)*0.8

M92	PR17=7.5K Ohm	VCC1.0=1.1V
Park Madison	PR17=4.99K Ohm	VCC1.0=1.0V

VCC0.9

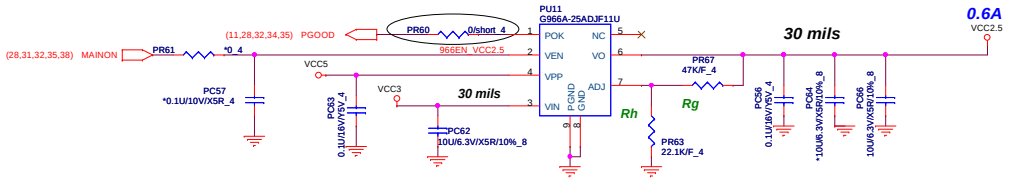


Vout1 = (1+Rg/Rh)*0.8

Remove parts to fix 0.9V

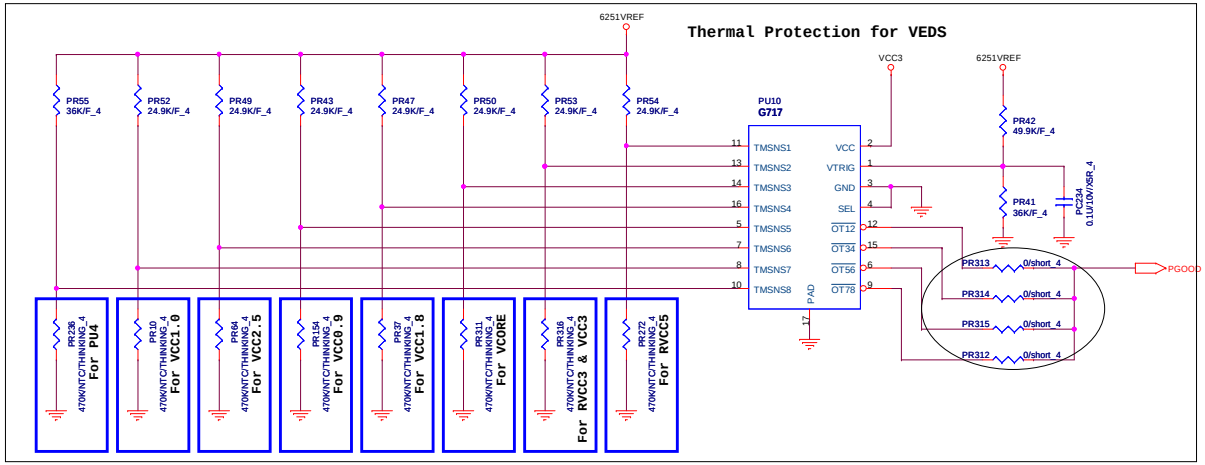
VDDR_09_EN#	High	Low
VCC0.9	1.05V	0.9V

VCC2.5



Vout1 = (1+Rg/Rh)*0.8

Thermal Protection for VEDS



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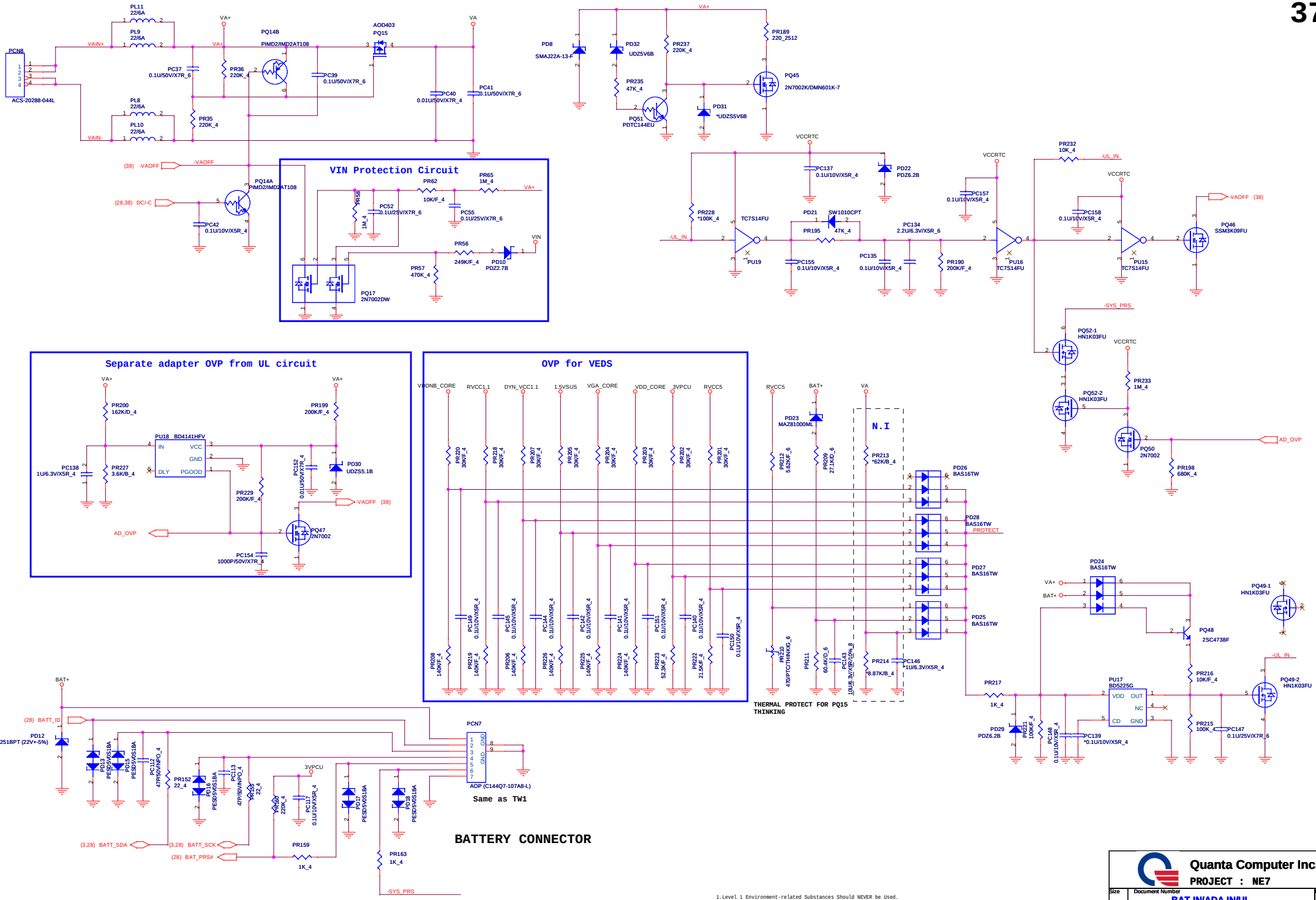
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	VCC1.8/0.9/2.5/1.0	3A

Date: Monday, March 22, 2010 Sheet 36 of 42



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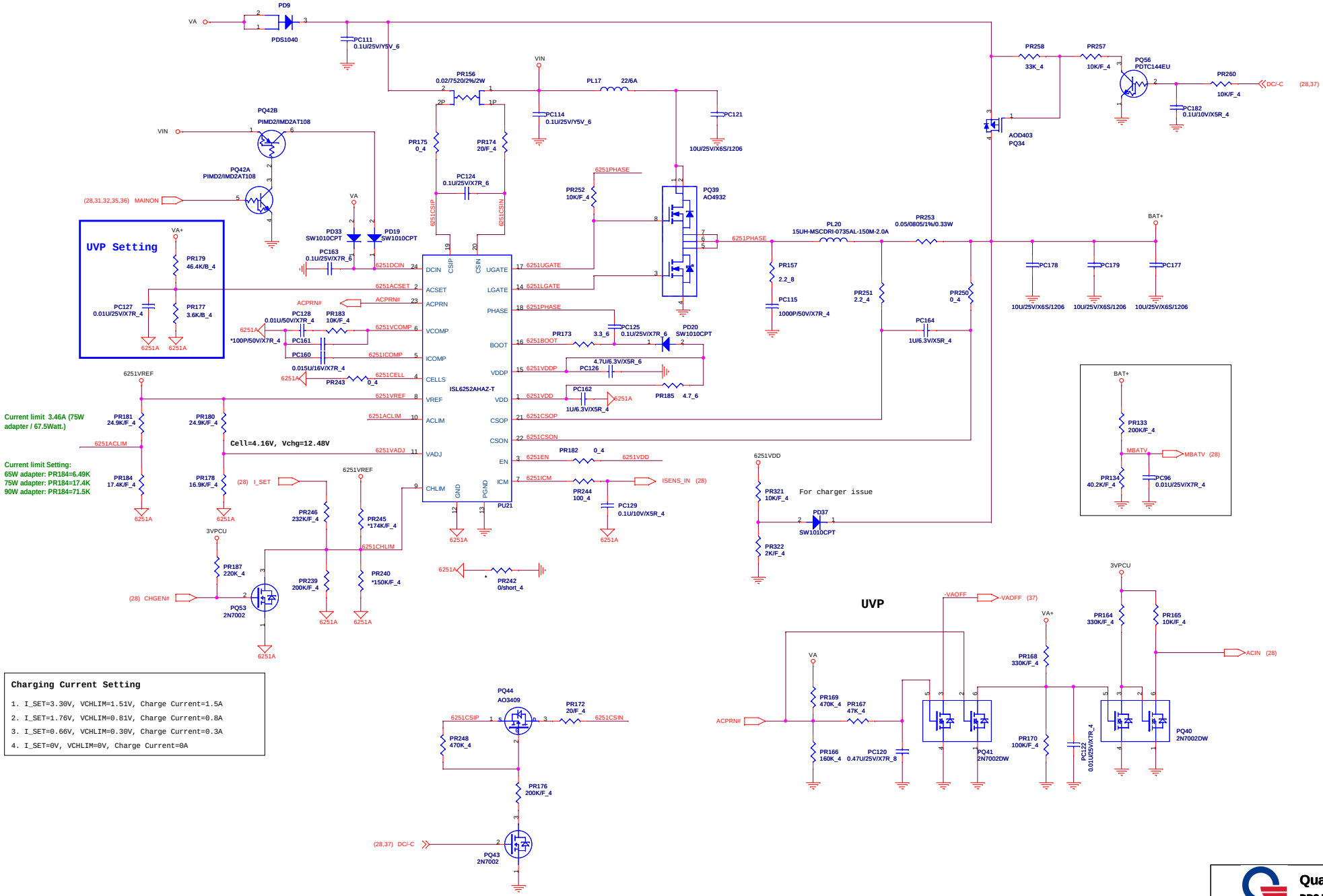
Quanta Computer Inc.
PROJECT : NE7

Size	Document Number	Rev
	BAT IN/ADA IN/UL	3A

Date: Monday, March 22, 2010 Sheet 37 of 42



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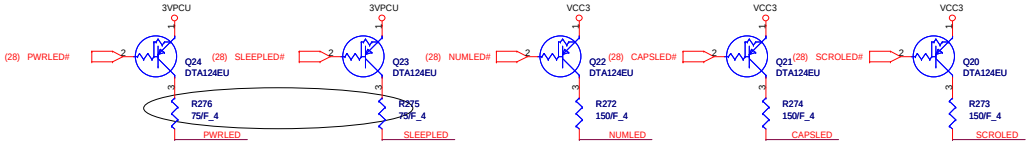
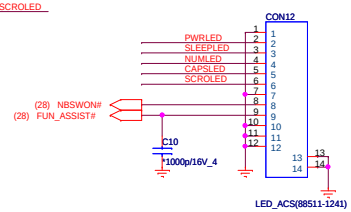
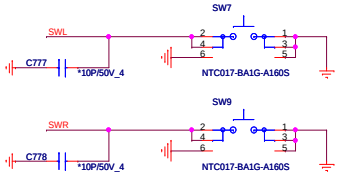
Quanta Computer Inc.		
PROJECT : NE8		
Size	Document Number	Rev
	CHARGER(ISL6252A)	3A
Date: Monday, March 22, 2010	Sheet 38 of 42	



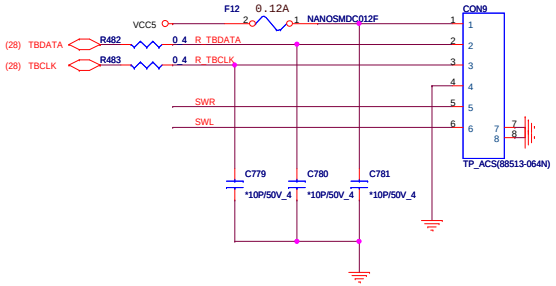
3A: R276/R275 change to 75 ohm for LED brightness

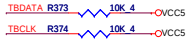
MB to LED board



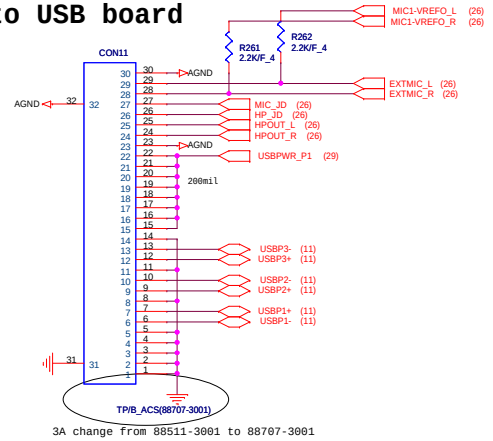


MB to TP connector

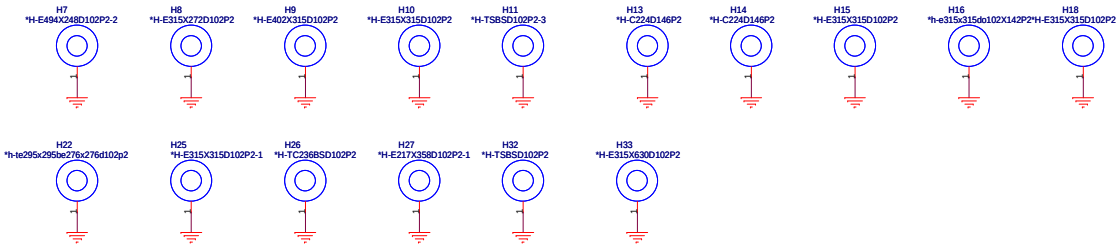




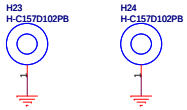
MB to USB board



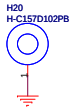
3A change from 88511-3001 to 88707-3001



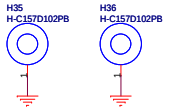
WLAN



BT



1.8V MOS



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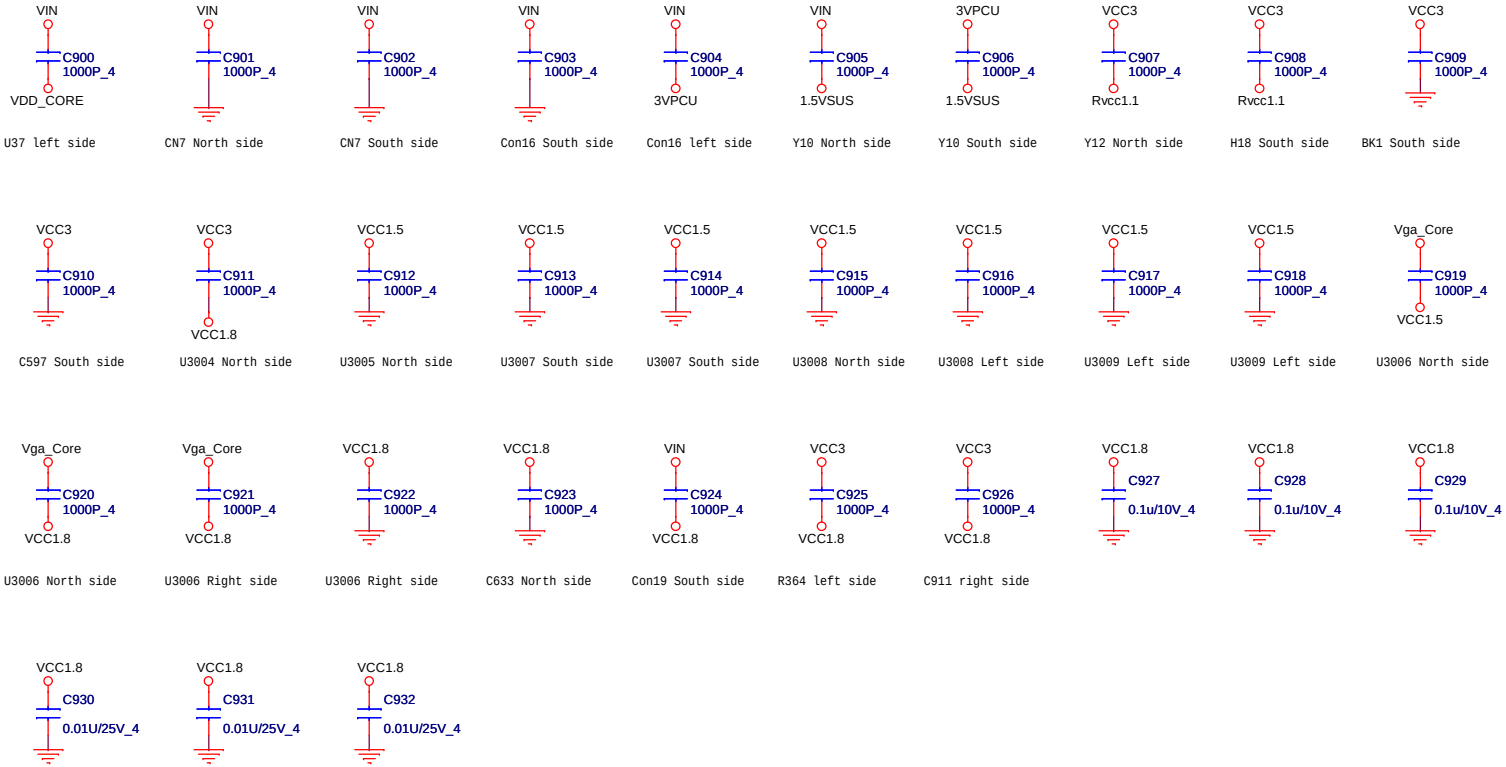
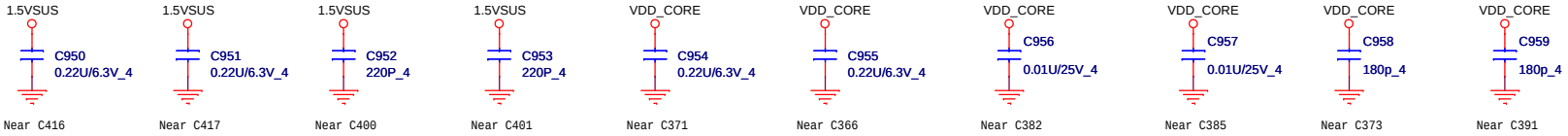
Decoulping Cap



Power ripple



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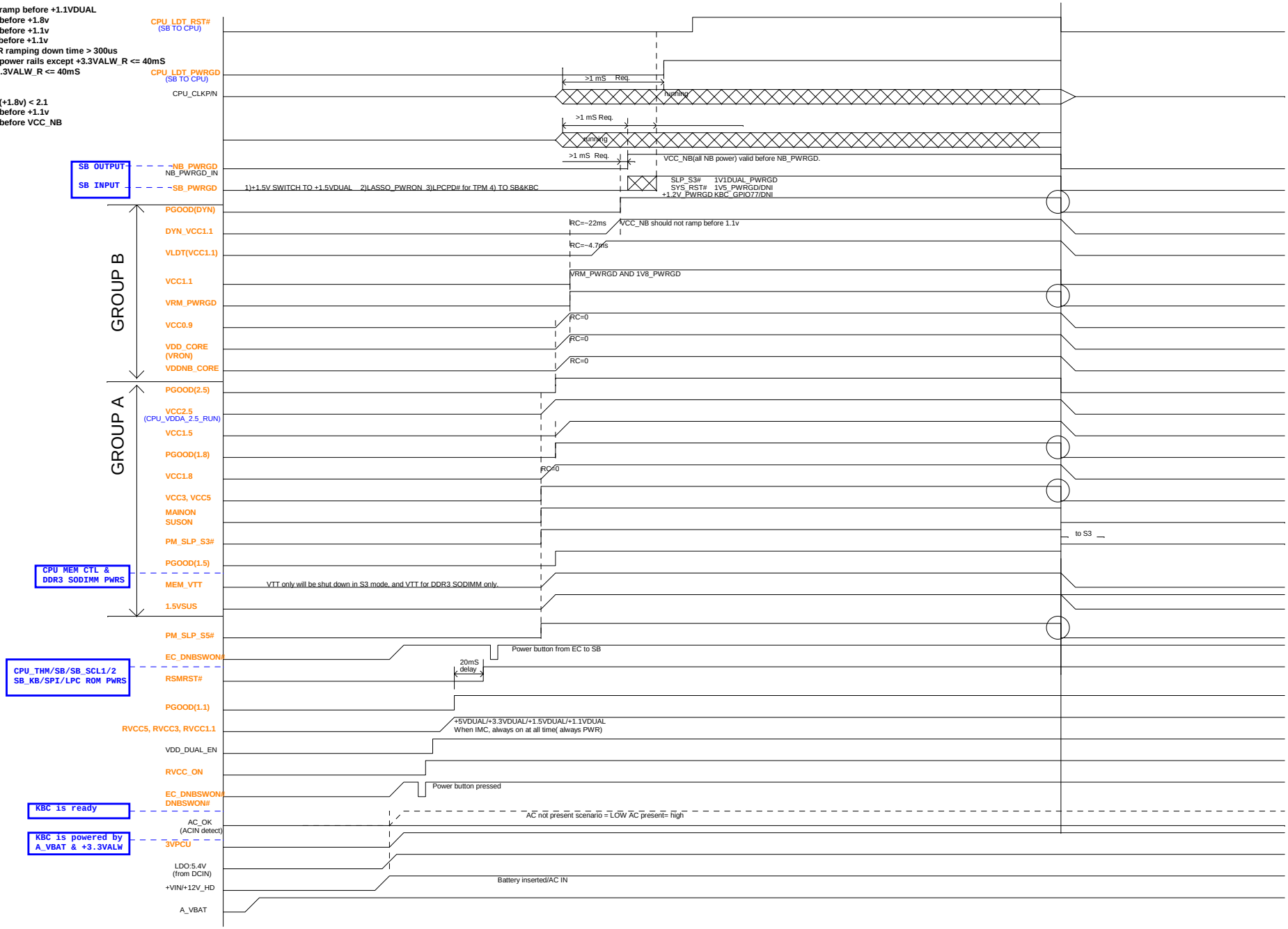
Power on Sequence required:

SB800:
1, +3.3VDUAL ramp before +1.1VDUAL
2, +3.3V ramp before +1.8v
3, +1.8V ramp before +1.1v
4, +3.3v ramp before +1.1v
5, +3.3VALW_R ramping down time > 300us
6, 50uS <= All power rails except +3.3VALW_R <= 40mS
7, 100uS <= +3.3VALW_R <= 40mS

RS880:
1, 0 <(+3.3V) - (+1.8v) < 2.1
2, +1.8V ramp before +1.1v
3. +1.1V ramp before VCC_NB



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2A Adding R159 (10K) for shut down issue.

3A Rename for location(R464, C452)

3A Delete AMD debug connector

3A change R169, R155, R162, R340,
R163, R161, R168, R341, R337 to short pad

3A Delete R332, R249, R181, R333 0ohm

3A change L23, L24, L29, L21, R156,
R171, R167 to short pad

3A Delete R427, R428, R429, R430 0ohm.

3A delete RP36, RP42, RP38,
RP26, RP43, RP41, RP35 0ohm

3A：Delete R358 0ohm

3A：change R247, R305 from 100k to 10Kohm

3A：change R196, R198 from 100k to 10Kohm

3A change R150, L27, L26, L30 to short pad

3A change R172, L42, L28, L25 to short pad

3A change R309, R184, L31, L34, L41 to short pad

3A change L32, L33, L35, R212 to short pad

3A Adding GPIO3、4 for VGA thermal sensor

3A：change L3004, L3019 to short pad

3A change L3006, L3010 to short pad

3A delete L3007, L3012, L3013, R3061 0ohm

3A delete R3049 0ohm

3A change R3112 to short pad

3A delete R3113 0ohm

3A change R252 to short pad.

3A change MR2, MR3, MR8, MR9, MR10, MR11,
MR12, MR13, MR14, MR15, MR16, MR17,
MR18, ML1 to short pad.

3A：adding Q30 for ESD.

3A Change R214 to short pad

Remove short pad: R422,R423

3A: delete R277, R294 0ohm

3A: Change L36, L37, L38, L39 to short pad

3A delete R290, R295(colayout) 0ohm, T74(EC side)

3A C541, C542, C543 change from AGND to GND

3A R375 no mount

3A delete LR14 0ohm

3A change LR6 to short pad

3A change R478 to short pad

3A adding R485 PD for mute

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